Service instructions

for contractors

Vitodens 200-W
Type WB2C
Wall mounted gas condensing boiler
4.8 to 35 kW natural gas and LPG version
Gas Council no.:
41-819-14; 41-819-15; 41-819-16; 41-819-17 (system boilers)
47-819-09; 47-819-10; 47-819-11 (combi boilers)

For applicability, see the last page

VITODENS 200-W

5692 857 GB 4/2010

Please keep safe.

Safety instructions

Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained

Danger
This symbol warns against the risk of injury.

Please note
This symbol warns against the risk of material losses and environmental pollution.

Note
Details identified by the word "Note" contain additional information.

Target group

These instructions are exclusively designed for qualified personnel.
- Work on gas equipment must only be carried out by a qualified gas fitter.
- Work on electrical equipment must only be carried out by a qualified electrician.
- The system must be commissioned by the system installer or a qualified person authorised by the installer.

Regulations

Observe the following when working on this system
- all legal instructions regarding the prevention of accidents,
- all legal instructions regarding environmental protection,
- the Code of Practice of relevant trade associations,
- all current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards,
- Gas Safety (Installation & Use) Regulations
  - the appropriate Building Regulation either the Building regulations, the Building Regulation (Scotland), Building Regulations (Northern Ireland),
  - the Water Fittings Regulation or Water Bylaws in Scotland,
  - the current I.E.E. Wiring Regulations.

If you smell gas

Danger
Escaping gas can lead to explosions which may result in serious injury.
- Never smoke. Prevent naked flames and sparks. Never switch lights or electrical appliances ON or OFF.
- Close the gas shut-off valve.
- Open windows and doors.
- Remove all people from the danger zone.
- Notify your gas or electricity supplier from outside the building.
- Shut off the electricity supply to the building from a safe place (outside the building).

5692 857 GB

Safety instructions (cont.)

If you smell flue gas

Danger
Flue gas can lead to life-threatening poisoning.
- Shut down the heating system.
- Ventilate the boiler room.
- Close all doors leading to the living space.

Working on the system

- When using gas as fuel, also close the main gas shut-off valve and safeguard against unauthorised reopening.
- Isolate the system from the power supply and check that it is no longer 'live', e.g. by removing a separate fuse or by means of a main isolator.
- Safeguard the system against unauthorised reconnection.

Please note
Electronic modules can be damaged by electro-static discharges.
Touch earthed objects, such as heating or water pipes, to discharge static loads.

Repair work

Please note
Repairing components which fulfil a safety function can compromise the safe operation of your heating system.
Replace faulty components only with original Viessmann spare parts.

Ancillary components, spare and wearing parts

Please note
Spare and wearing parts which have not been tested together with the heating system can compromise its function. Installing non-authorised components and non-approved modifications/conversion can compromise safety and may invalidate our warranty.
For replacements, use only original spare parts from Viessmann or those which are approved by Viessmann.

5692 857 GB

Index

Commissioning, inspection, maintenance
Steps - commissioning, inspection and maintenance 6
Further details regarding the individual steps 8

Code 1
Calling up coding level 1 39
General/Group 1 40
Boiler/Group 2 42
DHW/Group 3 43
Solar/Group 4 44
Heating circuit 1, heating circuit 2, heating circuit 3/Group 5 46

Code 2
Calling up coding level 2 53
General/Group 1 54
Boiler/Group 2 62
DHW/Group 3 64
Solar/Group 4 66
Heating circuit 1, heating circuit 2, heating circuit 3/Group 5 73

Diagnosis and service scans
Calling up the service menu 83
Diagnosis 83
Checking outputs (relay test) 89

Troubleshooting
Fault display 91
Fault codes 93
Repairs 105

Function description
Constant temperature control unit 115
Weather-compensated control unit 116
Internal extensions (accessories) 118
External extensions (accessories) 120
Control functions 124
Allocating heating circuits to the remote control 132
Electronic combustion controller 132

Designs
Connection and wiring diagrams – internal connections 134
Connection and wiring diagram – external connections 136

5692 857 GB

Index (cont.)

Parts lists..... 138

Commissioning/service reports..... 144

Specification..... 145

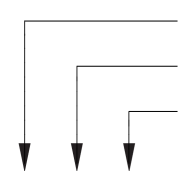
Certificates
Declaration of conformity..... 147
Manufacturer's certificate according to the 1st BImSchV [Germany]..... 148

Keyword index..... 149

5692 857 GB

Steps - commissioning, inspection and maintenance

For further information regarding the individual steps, see the page indicated



Commissioning steps	Inspection steps	Maintenance steps		Page
•			**1. Filling the heating system**	8
•			**2. Checking power supply connection**	
•			**3. Selecting the language (if required) - only for weather-compensated control units**	9
•	•		**4. Setting the time and date (if required) - only for weather-compensated control units**	9
•	•		**5. Setting the time and date (if required) - for constant temperature control units**	10
•			**6. Venting the boiler**	10
•			**7. Venting the heating system**	11
•			**8. Filling the siphon with water**	12
•	•	•	**9. Checking all connections on the heating water side and DHW side for leaks**	
•			**10. Designating heating circuits – only for weather-compensated control units**	12
•		•	**11. Checking the gas type**	12
•			**12. Gas type conversion (only for operation with LPG)**	13
•	•	•	**13. Function sequence and possible faults**	13
•	•	•	**14. Checking the static and supply pressure**	15
•			**15. Setting the maximum output**	17
•			**16. Checking the balanced flue system tightness (annular gap check)**	18
	•	•	**17. Burner removal**	19
	•	•	**18. Checking the burner gasket and the burner gauze assembly**	19
	•	•	**19. Checking and adjusting the ignition and ionisation electrodes**	21

5692 857 GB

Steps - commissioning, inspection and… (cont.)

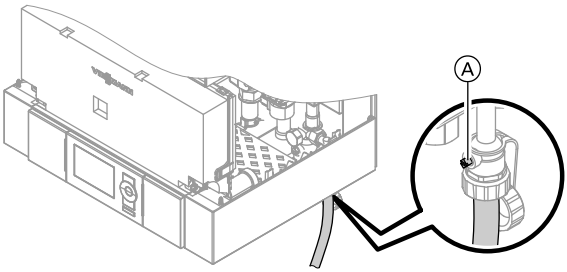
Commissioning steps	Inspection steps	Maintenance steps		Page
	•	•	**20. Cleaning the heat exchanger and installing the burner**	21
	•	•	**21. Checking the condensate drain and cleaning the siphon**	23
	•	•	**22. Checking the neutralising system (if installed)**	
		•	**23. Checking the flow limiter (only for gas combi boilers)**	24
	•	•	**24. Checking the diaphragm expansion vessel and system pressure**	24
•	•	•	**25. Checking the function of safety valves**	
•	•	•	**26. Checking electrical connections for firm seating**	
•	•	•	**27. Checking all gas equipment for tightness at operating pressure**	25
•		•	**28. Checking the combustion quality**	25
•	•	•	**29. Checking the external LPG safety valve (if installed)**	
•			**30. Matching the control unit to the heating system**	27
•			**31. Adjusting the heating curves (only for weather-compensated control units)**	32
•			**32. Connecting the control unit to the LON system (only for weather-compensated control units)**	35
		•	**33. Scanning and resetting the Service display**	37
•			**34. Instructing the system user**	38

5692 857 GB

Further details regarding the individual steps

Filling the heating system

Please note
Unsuitable fill water increases the level of deposits and corrosion and may lead to boiler damage.
- Thoroughly flush the entire heating system prior to filling it with water.
- Only use fill water of potable quality.
- Soften fill water with hardness exceeding 300 ppm (3.0 mol/m^3), e.g. using a small softening system for heating water (see Viessmann Vitoset pricelist).
- An antifreeze additive suitable for heating systems can be added to the fill water. The antifreeze manufacturer must verify its suitability.



1. Check the pre-charge pressure of the diaphragm expansion vessel.
2. Close the gas shut-off valve.
3. Fill the heating system via boiler drain & fill valve Ⓐ in the heating return (at the connection set or on site) (minimum system pressure > 1.0 bar).

Note
If the control unit has not been switched ON prior to filling the system, then the servomotor of the diverter valve will still be in its central position, and the system will be completely filled.

Note
If an external filling loop is fitted, it must meet the requirements of the Water Fittings Regulations 1999 Section G 24.1 and G 24.2.

Further details regarding the individual steps (cont.)

4. If the control unit had already been switched ON before filling began: Switch control unit ON and activate filling function (see next chapter).

5. Close boiler drain & fill valve Ⓐ.

Activating filling function with weather-compensated control units:

1. Press **OK** and ☰ simultaneously for approx. 4 s.

2. **"Service functions"**

3. **"Filling"**

4. Ending filling function: Press **OK** or ⮌.

Activating filling function with constant temperature control units:

1. Press **OK** and ☰ simultaneously for approx. 4 s.

2. Select **"④"** with ▶ and confirm with **OK**.
   When the filling function is active, **"bF on"** will be displayed.

3. Ending filling function: Press ⮌.

Selecting the language (if required) - only for weather-compensated control units

Note
At the commissioning stage, the display is in German (default setting)

Extended menu:

1. ☰

2. **"Settings"**

3. **"Language"**

4. Set the required language with ▲/▼.

Setting the time and date (if required) - only for weather-compensated control units

During commissioning, or after prolonged time out of use, the time and date need to be reset.

Extended menu:

1. ☰

2. **"Settings"**

3. **"Time / Date"**

4. Set current time and date.

Further details regarding the individual steps (cont.)

Setting the time and date (if required) - for constant temperature control units

The time and date need to be reset during commissioning or after prolonged time out of use. After starting the system, the display flashes the time (🕘).

Press the following keys:

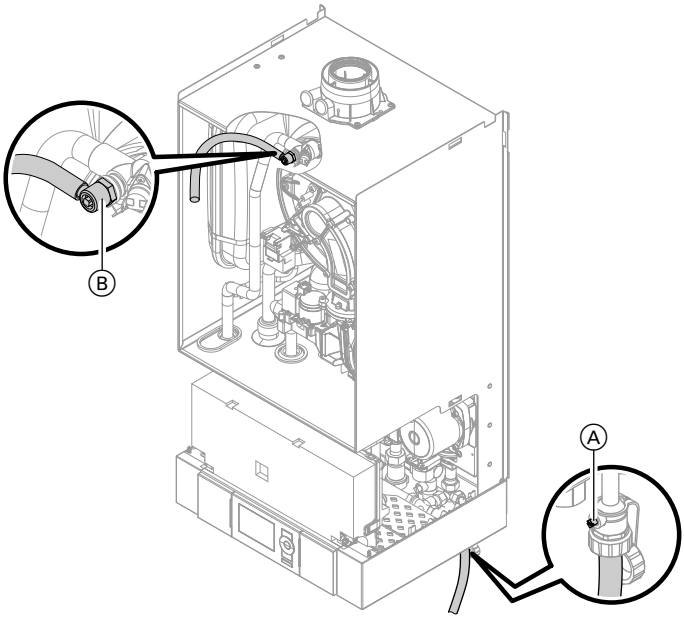
1. ▲/▼ for the required time.

2. OK to confirm; the new time unit is saved, 📖 appears.

3. ▲/▼ for the required date.

4. OK to confirm; the new date is saved.

Venting the boiler



1. Close the shut-off valves on the heating water side.

2. Connect the drain hose between top valve Ⓑ and a drain outlet.

3. Open valves Ⓐ and Ⓑ, and vent at mains pressure until no sound of escaping air can be heard.

Further details regarding the individual steps (cont.)

4. Close valves Ⓐ and Ⓑ, remove the filling equipment and open the shut-off valves on the heating water side.

Venting the heating system

1. Close the gas shut-off valve and switch the control unit ON.
2. Activate venting program (see next steps).

   Note
   For function and sequence of the venting program, see page 126.

3. Check the system pressure.

Activating the venting program with weather-compensated control units:

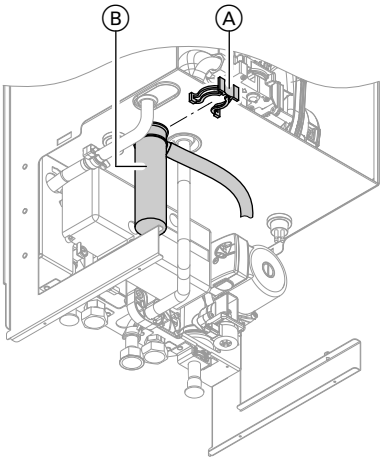
1. Press **OK** and ☰: simultaneously for approx. 4 s.
2. **"Service functions"**
3. **"Venting"**
4. Terminating venting program: Press **OK** or ⮌.

Activating venting program with constant temperature control units:

1. Press **OK** and ☰: simultaneously for approx. 4 s.
2. Select **"⑤"** with ▸ and confirm with **OK**.
   When the venting function is active, **"EL on"** will be displayed.
3. Terminating venting program: Press ⮌.

Further details regarding the individual steps (cont.)

Filling the siphon with water



1. Remove retaining clip Ⓐ and siphon Ⓑ.
2. Fill siphon Ⓑ with water.
3. Fit siphon Ⓑ and secure with retaining clip Ⓐ.

Designating heating circuits – only for weather-compensated control units

In the delivered condition, the heating circuits are designated "Heating circuit 1", "Heating circuit 2" and "Heating circuit 3" (if installed).
If the system user prefers, the heating circuits can be designated differently to suit the specific system.

To enter names for heating circuits:

Operating instructions

Checking the gas type

The boiler is equipped with an electronic combustion controller that adjusts the burner for optimum combustion in accordance with the prevailing gas quality.

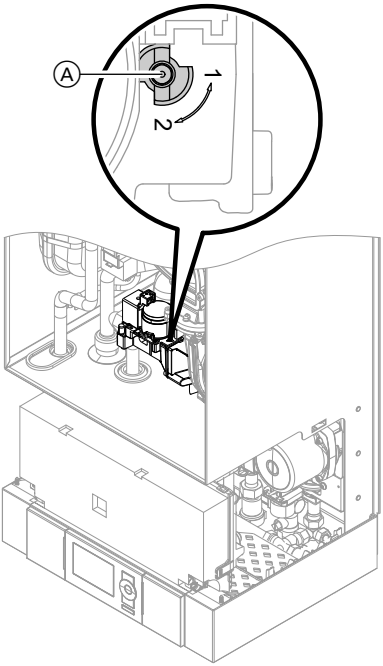
- Consequently, for natural gas there is no adjustment required across the entire Wobbe index range.
  The boiler can be operated in the Wobbe index range 9.5 to 15.2 kWh/m^3 (34.2 to 54.7 MJ/m^3).
- Convert the burner for operation with LPG (see "Gas type conversion" on page 13).

5692 857 GB

Further details regarding the individual steps (cont.)

1. Determine the gas type and Wobbe index by asking your local gas supply utility or LPG supplier.
2. Convert the burner for operation with LPG (see page 13).
3. Record the gas type in the service report on page 144.

Gas type conversion (only for operation with LPG)

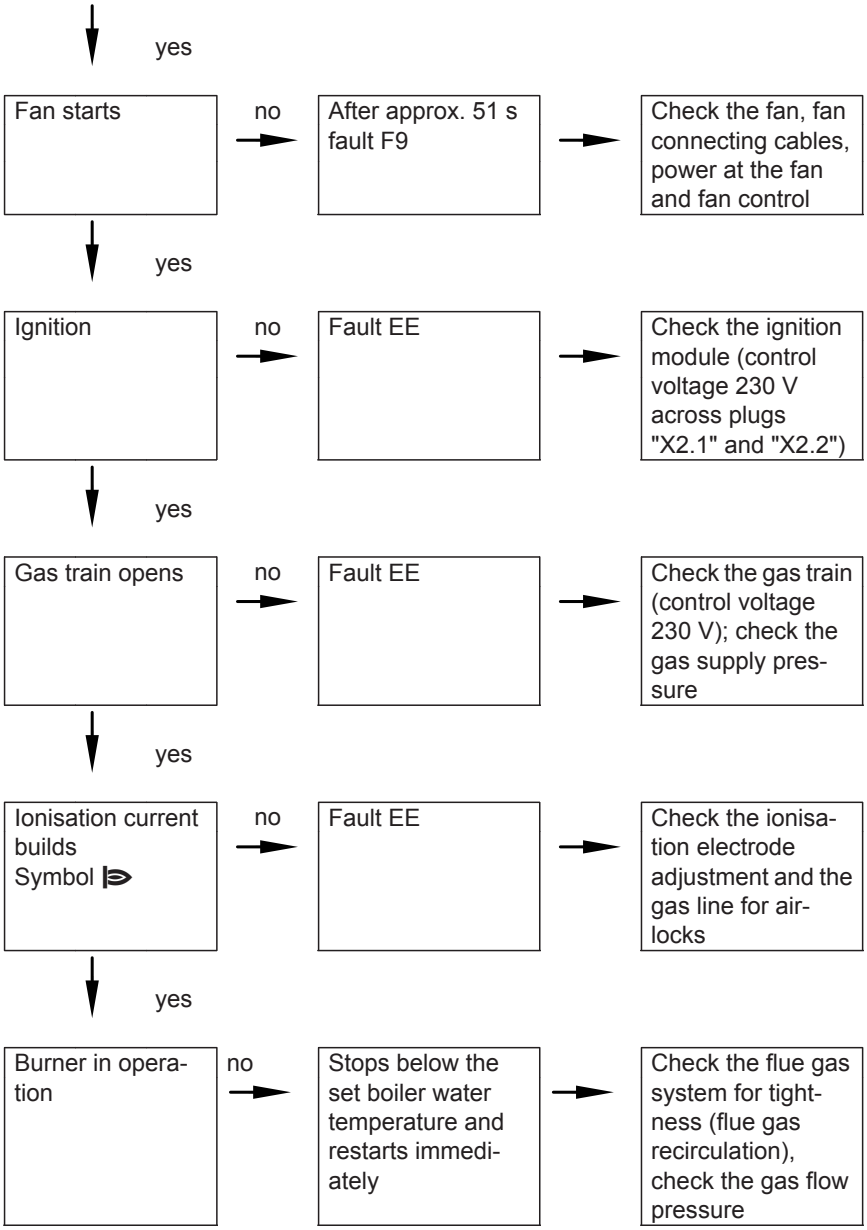


1. Set adjusting screw Ⓐ at the gas train to "2".
2. Turn ON/OFF switch ⏻ ON.
3. Select the gas type in coding address "82":
   - Call up code 2
   - **"General"** (control unit for weather-compensated mode) or Group **"1"** (constant temperature control units) - call up
   - In coding address "11", select value "9"
   - In coding address "82", select value "1" (LPG operation)
   - In code "11" select value ≠ "9".
   - End service functions.
4. Open the gas shut-off valve.
5. Affix label "G31" (supplied with the technical documentation) adjacent to the type plate on the top.

Function sequence and possible faults

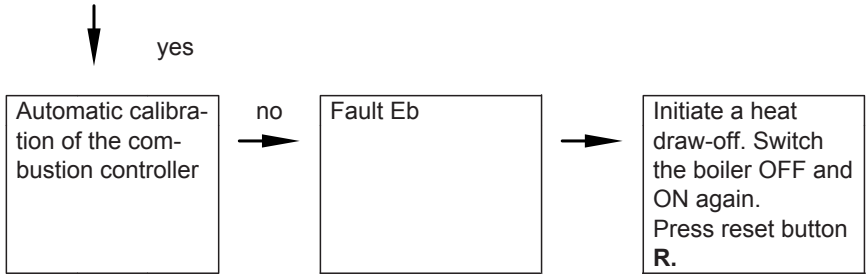
	Display	Measures
Control unit issues a heat demand	→ no →	Increase set value and ensure heat is drawn off

Further details regarding the individual steps (cont.)


yes
Fan starts
no
After approx. 51 s fault F9
Check the fan, fan connecting cables, power at the fan and fan control
yes
Ignition
no
Fault EE
Check the ignition module (control voltage 230 V across plugs "X2.1" and "X2.2")
yes
Gas train opens
no
Fault EE
Check the gas train (control voltage 230 V); check the gas supply pressure
yes
Ionisation current builds
Symbol
no
Fault EE
Check the ionisation electrode adjustment and the gas line for air-locks
yes
Burner in operation
no
Stops below the set boiler water temperature and restarts immediately
Check the flue gas system for tightness (flue gas recirculation), check the gas flow pressure

5692 857 GB

Further details regarding the individual steps (cont.)


yes
Automatic calibration of the combustion controller
no
Fault Eb
Initiate a heat draw-off. Switch the boiler OFF and ON again.
Press reset button **R.**

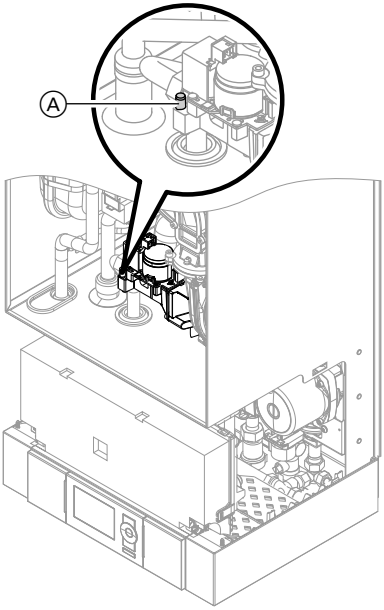
For further fault details, see page 91.

Checking the static and supply pressure

Danger
CO build-up as a result of an incorrect burner setup can have serious health implications.
Carry out a CO test prior to and after work on gas equipment.

Operation with LPG
Flush the LPG tank twice during commissioning/replacement. Thoroughly vent the tank and gas supply lines after flushing.

Further details regarding the individual steps (cont.)



1. Close the gas shut-off valve.
2. Undo screw Ⓐ inside test nipple "IN" on the gas train but do not remove it, and connect the pressure gauge.
3. Open the gas shut-off valve.
4. Measure the static pressure and record it in the service report on page 144.
   Set value max. 57.5 mbar.
5. Start the boiler.

   Note
   *During commissioning, the boiler can enter a fault state because of airlocks in the gas line. After approx. 5 s press reset button **R** to reset the burner.*

6. Check the supply (flow) pressure.

   Set value:
   - Natural gas: 20 mbar
   - LPG: 37 mbar

   Note
   Use suitable test equipment with a resolution of at least 0.1 mbar to measure the supply pressure.

7. Record the actual value in the service report on page 144.
   Take the action shown in the following table.
8. Shut down the boiler, close the gas shut-off valve, remove the pressure gauge and close test nipple Ⓐ with the screw.
9. Open the gas shut-off valve and start the boiler.

   Danger
   Gas escaping from the test nipple leads to a risk of explosions.
   Check test nipple Ⓐ for tightness.

Further details regarding the individual steps (cont.)

Supply pressure (flow pressure)		Measures
for natural gas	**for LPG**	
below 17.4 mbar	below 25 mbar	Do not start the boiler. Notify your gas supply utility or LPG supplier.
17.4 to 25 mbar	25 to 47 mbar	Start the boiler.
above 25 mbar	above 47 mbar	Install a separate gas pressure governor upstream of the system and regulate the supply pressure to 20 mbar for natural gas or 37 mbar for LPG. Notify your gas supply utility or LPG supplier.

Setting the maximum output

You can limit the maximum output for **heating operation**. The limit is set via the modulation range. The max. adjustable heating output is limited upwards by the boiler coding card.

Weather-compensated control unit:

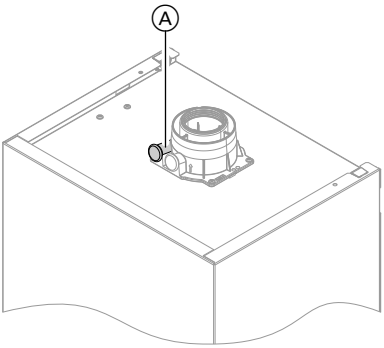
1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Service functions"**
3. **"Max. output"**
4. **"Change?"** Select **"Yes"**.
   A value flashes on the display (e.g. "85"). In the delivered condition, this value represents 100 % of rated output.
5. Select required value.

Constant temperature control unit:

1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. Select ▸ **"③"** and confirm with **OK**. A value flashes on the display (e.g. "85") and "⊱" appears. In the delivered condition, this value represents 100 % of rated output.
3. Select required value and confirm with **OK**.

Further details regarding the individual steps (cont.)

Checking the balanced flue system tightness (annular gap check)



Ⓐ Combustion air aperture

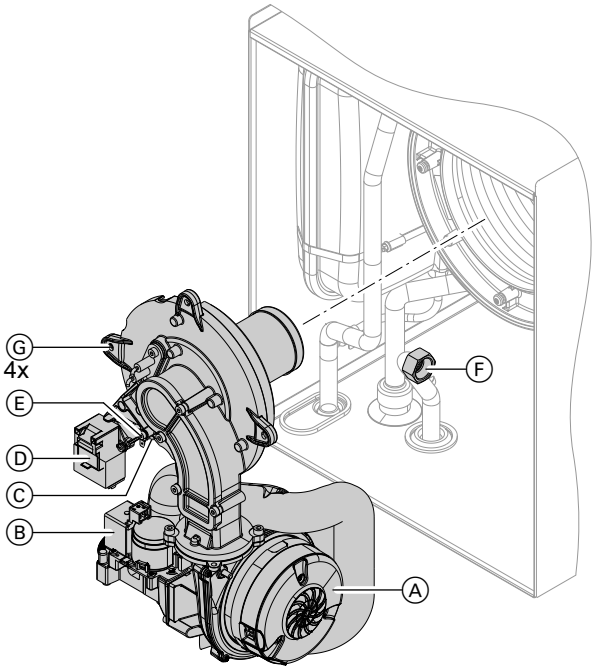
For balanced flue systems tested together with the wall mounted gas fired boiler, the requirement for a tightness test during commissioning by the flue gas inspector is not applicable.

We recommend that your heating engineer carries out a simple leak/tightness test during the commissioning of your system. For this, it would be sufficient to check the CO_2 or O_2 concentration in the combustion air at the annular gap of the balanced flue pipe.
The flue pipe is deemed to be gas-tight if the CO_2 concentration in the combustion air is no higher than 0.2 % or the O_2 concentration is at least 20.6 %.
If actual CO_2 values are higher or O_2 values are lower, then pressure test the flue pipe with a static pressure of 200 Pa.

5692 857 GB

Further details regarding the individual steps (cont.)

Burner removal



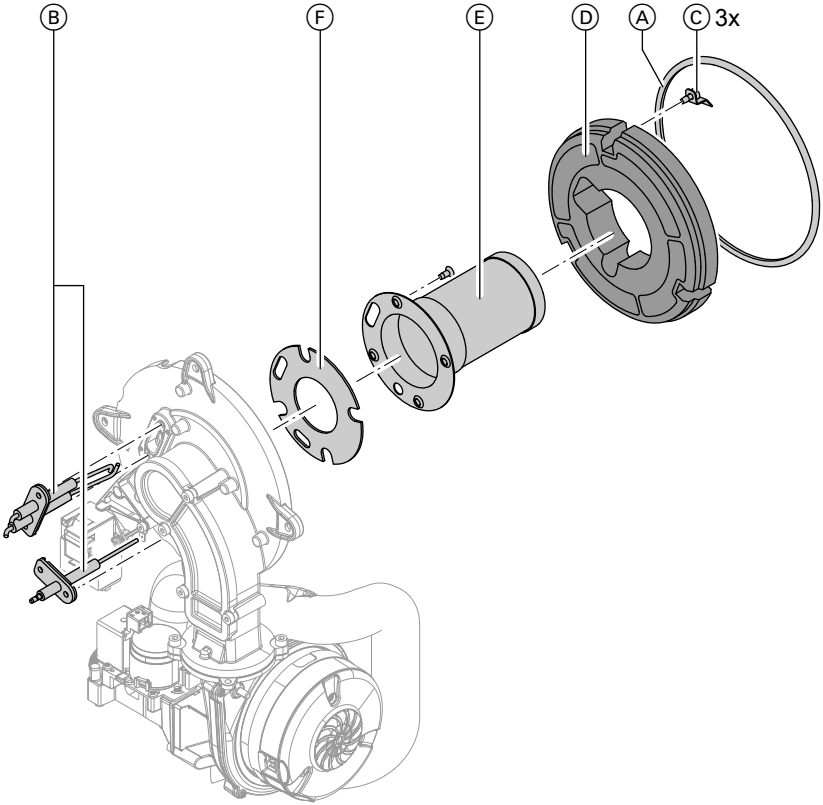
1. Switch OFF the main power supply and the ON/OFF switch at the control unit.
2. Close the gas shut-off valve and safeguard against reopening.
3. Pull cables from fan motor Ⓐ, gas train Ⓑ, ionisation electrode Ⓒ, ignition unit Ⓓ and earth tab Ⓔ.
4. Release gas supply pipe fitting Ⓕ.
5. Undo four screws Ⓖ and remove the burner.

! **Please note**
To prevent damage, never rest the burner on the gauze assembly.

Checking the burner gasket and the burner gauze assembly

Check burner gasket Ⓐ and burner gauze assembly Ⓔ for damage and replace if required.

Further details regarding the individual steps (cont.)

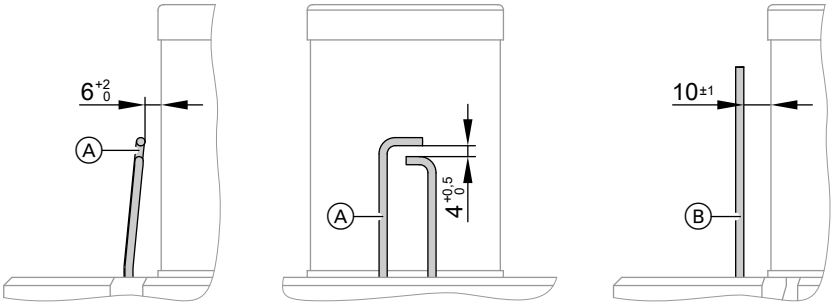


1. Remove electrodes Ⓑ.
2. Undo three retaining clips Ⓒ at thermal insulation ring Ⓓ and remove thermal insulation ring Ⓓ.
3. Undo four Torx screws and remove burner gauze assembly Ⓔ with its gasket Ⓕ.
4. Insert and secure a new burner gauze assembly Ⓔ with a new gasket Ⓕ.
   Torque: 3.5 Nm.
5. Refit thermal insulation ring Ⓓ.
6. Refit electrodes Ⓑ.
   Torque: 4.5 Nm.

5692 857 GB

Further details regarding the individual steps (cont.)

Checking and adjusting the ignition and ionisation electrodes



Ⓐ Ignition electrodes

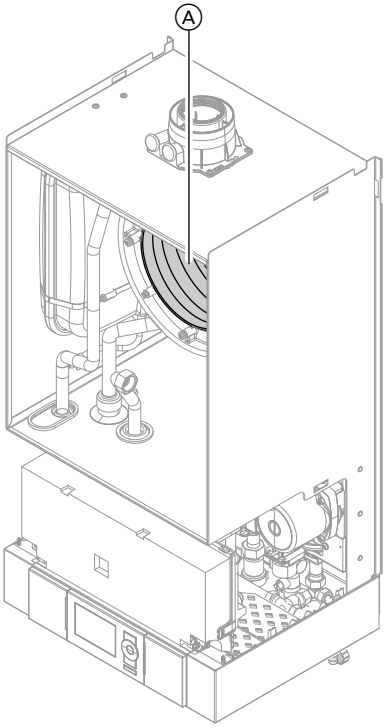
Ⓑ Ionisation electrode

1. Check the electrodes for wear and contamination.
2. Clean the electrodes with a small brush (not with a wire brush) or sand paper.
3. Check the electrode gaps. If the gaps are not as specified or the electrodes are damaged, replace the electrodes together with new gaskets and adjust them as required. Tighten the electrode fixing screws with 4.5 Nm.

Cleaning the heat exchanger and installing the burner

! **Please note**
Scratches on parts that are in contact with flue gas can lead to corrosion.
Never use brushes to clean the heat exchanger.

Further details regarding the individual steps (cont.)



1. Use a vacuum cleaner to remove residues from heat exchanger Ⓐ inside the combustion chamber.

2. If required, spray slightly acidic, chloride-free cleaning agents based on phosphoric acid (e.g. Antox 75 E) onto heat exchanger Ⓐ and let the solution soak in for approx. 20 min.

3. Thoroughly flush heat exchanger Ⓐ with water.

4. Install the burner and torque the screws diagonally with 8.5 Nm.

5. Fit the gas supply pipe with a new gasket.

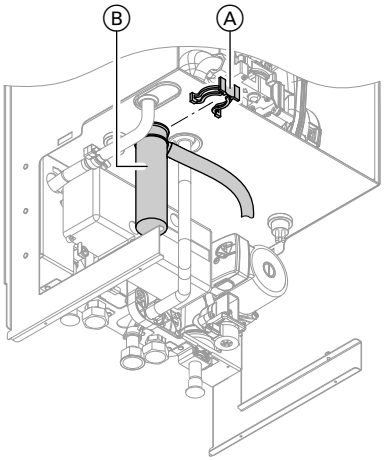
6. Check the gas connections for tightness.

   Danger
   Escaping gas leads to a risk of explosion.
   Check all fittings for gas tightness.

7. Connect the electrical cables/leads to each corresponding component.

Further details regarding the individual steps (cont.)

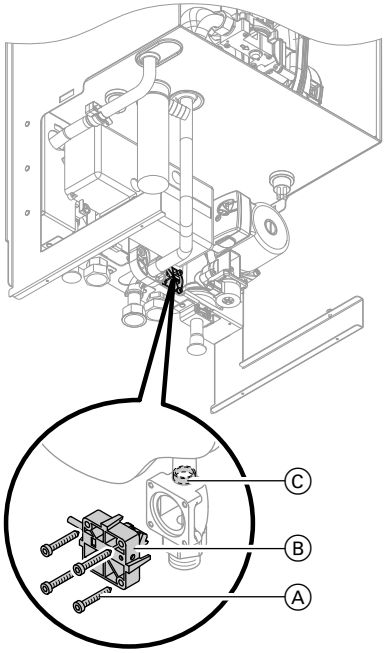
Checking the condensate drain and cleaning the siphon



1. Check that the condensate can drain freely at the siphon.
2. Remove retaining clip Ⓐ and siphon Ⓑ.
3. Clean siphon Ⓑ.
4. Fill siphon Ⓑ with water and fit it to the boiler. Position retaining clip Ⓐ.

Further details regarding the individual steps (cont.)

Checking the flow limiter (only for gas combi boilers)



1. Switch OFF the control unit, shut off the cold water line and drain the DHW side of the boiler.
2. Undo Allen screws Ⓐ.

   Note
   Residual water may escape during dismantling.

3. Remove flow switch Ⓑ and take out flow limiter Ⓒ downwards.
4. Check flow limiter Ⓒ; replace in case of excessive scaling or damage. Refit flow switch Ⓑ.

Checking the diaphragm expansion vessel and system pressure

Note
Carry out this test on a cold system.

1. Drain the system, or close the cap valve on the diaphragm expansion vessel and reduce the pressure, until the pressure gauge indicates "0".
2. If the pre-charge pressure of the diaphragm expansion vessel is lower than the static system pressure, top up with nitrogen until the pre-charge pressure is raised by 0.1 to 0.2 bar.
3. Top up with water until the filling pressure of the cooled system is min. 1.0 bar and 0.1 to 0.2 bar higher than the pre-charge pressure of the expansion vessel.
   Permiss. operating pressure: 3 bar

Further details regarding the individual steps (cont.)

Checking all gas equipment for tightness at operating pressure

Danger
Escaping gas leads to a risk of explosion.
Check gas equipment for tightness.

Note
For the tightness test, use only suitable and approved leak detecting agents (EN 14291) and devices. Leak detecting agents with unsuitable constituents (e.g. nitrites, sulphides) can lead to material damage.
Remove residues of the leak detecting agent after testing.

Checking the combustion quality

The electronic combustion controller automatically ensures an optimum combustion quality. Only the combustion values need to be checked during commissioning and maintenance. For this, check the CO_2 or O_2 content. For a description of the electronic combustion controller functions, see page 132.

Note
Operate the appliance with uncontaminated combustion air to prevent operating faults and damage.

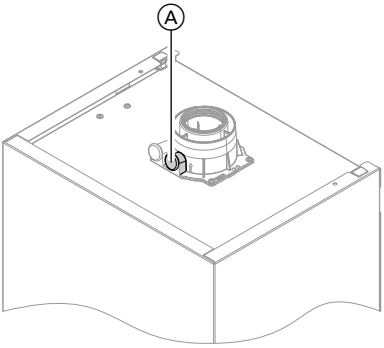
CO_2 or O_2 content
- The CO_2 content must be within the following limits (upper and lower output):
  - 7.7 to 9.2 % for natural gas H
  - 9.3 to 10.9 % for LPG P
- For all gas types, the O_2 content must be between 4.4 % and 6.9 %.

If the actual CO_2 or O_2 values lie outside their respective ranges, proceed with the following steps:
- Check the balanced flue system for tightness, see page 18.
- Check the ionisation electrode and connecting cable, see page 21.

Note
During commissioning, the combustion controller carries out an automatic calibration. Only test the emissions approx. 30 s after the burner has started.

5692 857 GB

Further details regarding the individual steps (cont.)



1. Connect a flue gas analyser at flue gas aperture Ⓐ on the boiler flue connection.
2. Open the gas shut-off valve, start the boiler and create a heat demand.
3. Select the lower output (see page 26).
4. Check the CO_2 content. Should the actual value deviate from the above ranges by more than 1 %, implement steps from page 25.
5. Enter actual values into the service report.
6. Select the upper output (see page 26).
7. Check the CO_2 content. Should the actual value deviate from the above ranges by more than 1 %, implement steps from page 25.
8. After testing, press **OK**.
9. Enter actual values into the service report.

Selecting the upper/lower output for weather-compensated control units:

1. Press **OK** and ☰: simultaneously for approx. 4 s.
2. **"Actuator test"**
3. Select the lower output: **"Base load start"** and confirm with **OK**.
4. Select the upper output: **"Full load start"** and confirm with **OK**.

Selecting the upper/lower output for constant temperature control units:

1. Press **OK** and ☰: simultaneously for approx. 4 s.
   "🔧" flashes on the display.
2. Select "⇄" with ▸ and confirm with **OK**.
   The display shows "**I**".
3. Select the lower output: Press **OK**.
4. Select the upper output: Press **OK**, select **"2"** with ▸and confirm with **OK**.

Note

If the actual CO_2 or O_2 and CO values deviate from the stated range, check the balanced flue systems for leaks. If the flue installation is OK, change the gas valve or contact the Viessmann service department.

5692 857 GB

Further details regarding the individual steps (cont.)

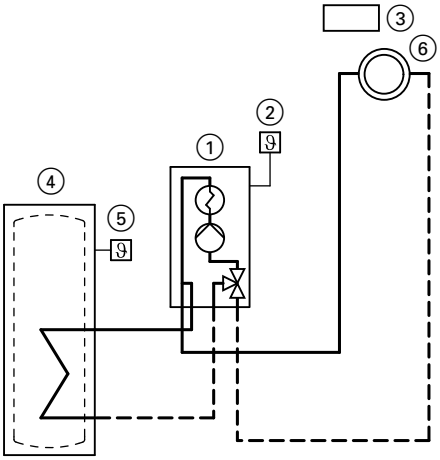
Matching the control unit to the heating system

Subject to the equipment level, the control unit must be matched to the system. Various system components are recognised automatically by the control unit and the relevant codes are adjusted automatically.

- For the selection of an appropriate scheme, see the following diagrams.
- For coding steps, see page 39.

System version 1

One heating circuit without mixer A1 (with/without DHW heating)



ID: 4605145_1001_01

① Vitodens 200-W
② Outside temperature sensor (only for weather-compensated control units)
③ Vitotrol 100 (only for constant temperature control units)
④ DHW cylinder
⑤ Cylinder temperature sensor
⑥ Heating circuit without mixer A1 (heating circuit 1)

Further details regarding the individual steps (cont.)

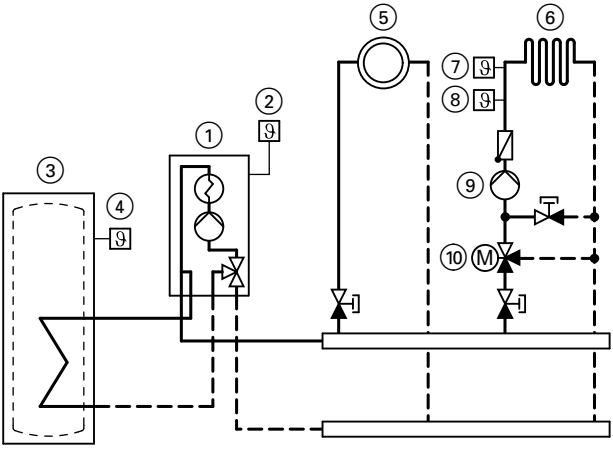
Function/system components	Code	
	Adjust	Delivered condition
Operation with LPG	82:1	82:0
System **with** DHW circulation pump: DHW circulation pump connection at internal extension H1 or H2	—	53:1

System version 2

One heating circuit without mixer A1 and one heating circuit with mixer M2 (with/without DHW heating)

Note

The flow rate of the heating circuit without mixer must be at least 30 % greater than the flow rate of the heating circuit with mixer.



ID: 4605146_1001_01

① Vitodens 200-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1 (heating circuit 1)
⑥ Heating circuit with mixer M2 (heating circuit 2)
⑦ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑧ Flow temperature sensor M2
⑨ Heating circuit pump M2

5692 857 GB

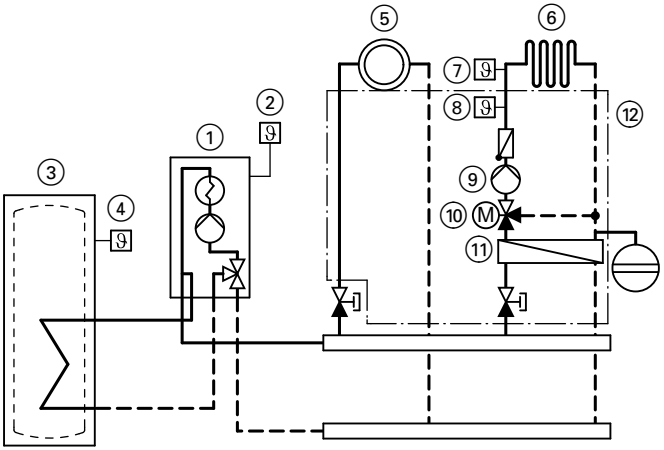
Further details regarding the individual steps (cont.)

⑩ Extension kit for one heating circuit with mixer M2

Function/system components	Code	
	Adjust	Delivered condition
Operation with LPG	82:1	82:0
System **only** with one heating circuit with mixer with extension kit for mixer (without unregulated heating circuit)		
■ with DHW cylinder	00:4	00:6
■ without DHW cylinder	00:3	00:5
System **with** DHW circulation pump DHW circulation pump connection at internal extension H1 or H2:	—	53:1

System version 3

One heating circuit without mixer A1 and one heating circuit with mixer M2 with system separation (with/without DHW heating)



ID: 4605147_1001_01

① Vitodens 200-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1 (heating circuit 1)

Further details regarding the individual steps (cont.)

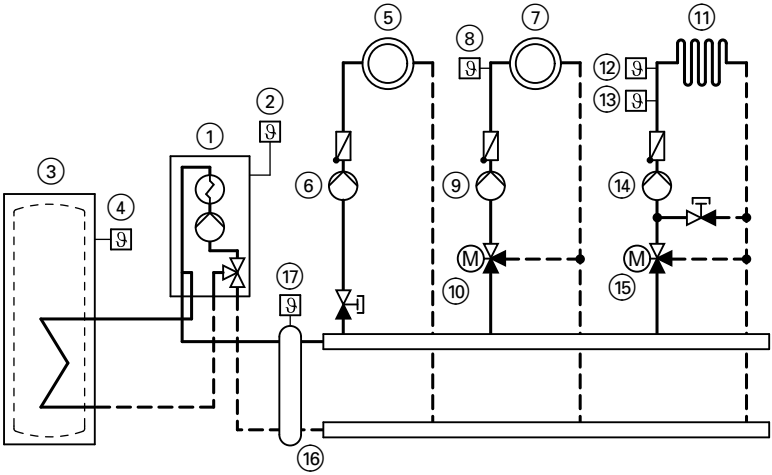
⑥ Heating circuit with mixer M2 (heating circuit 2)
⑦ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑧ Flow temperature sensor M2
⑨ Heating circuit pump M2
⑩ Extension kit for one heating circuit with mixer M2
⑪ Heat exchanger for system separation
⑫ Sub-mounting kit with mixer (accessory)

Function/system components	Code	
	Adjust	**Delivered condition**
Operation with LPG	82:1	82:0
System **only** with one heating circuit with mixer with extension kit for mixer (without unregulated heating circuit)		
■ with DHW cylinder	00:4	00:6
■ without DHW cylinder	00:3	00:5
System **with** DHW circulation pump: DHW circulation pump connection at internal extension H1 or H2	—	53:1

Further details regarding the individual steps (cont.)

System version 4

One heating circuit without mixer, one heating circuit with mixer M2 (with extension kit), one heating circuit with mixer M3 (with extension kit) and low loss header (with/without DHW heating)



ID: 4605149_1001_01

① Vitodens 200-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1 (heating circuit 1)
⑥ Heating circuit pump A1
⑦ Heating circuit with mixer M2 (heating circuit 2)
⑥ Flow temperature sensor M2
⑨ Heating circuit pump M2
⑩ Extension kit for one heating circuit with mixer M2
⑪ Heating circuit with mixer M3 (heating circuit 3)
⑫ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑬ Flow temperature sensor M3
⑭ Heating circuit pump M3
⑮ Extension kit for one heating circuit with mixer M3
⑯ Low loss header
⑰ Flow temperature sensor, low loss header

Further details regarding the individual steps (cont.)

Function/system components	Code	
	Adjust	Delivered condition
Operation with LPG	82:1	82:0
System **only** with two heating circuits with mixer with extension kit for mixer (without unregulated heating circuit)		
■ with DHW cylinder	00:8	00:10
■ without DHW cylinder	00:7	00:9
System **without** DHW circulation pump: Heating circuit pump A1 connection at internal extension H1 or H2	53:2	53:1
System **with** DHW circulation pump:		
Heating circuit pump A1 connection at extension AM1, terminal A1	—	33:1
DHW circulation pump termination at extension AM1, terminal A2	—	34:0
System with low loss header	04:0	04:1

Adjusting the heating curves (only for weather-compensated control units)

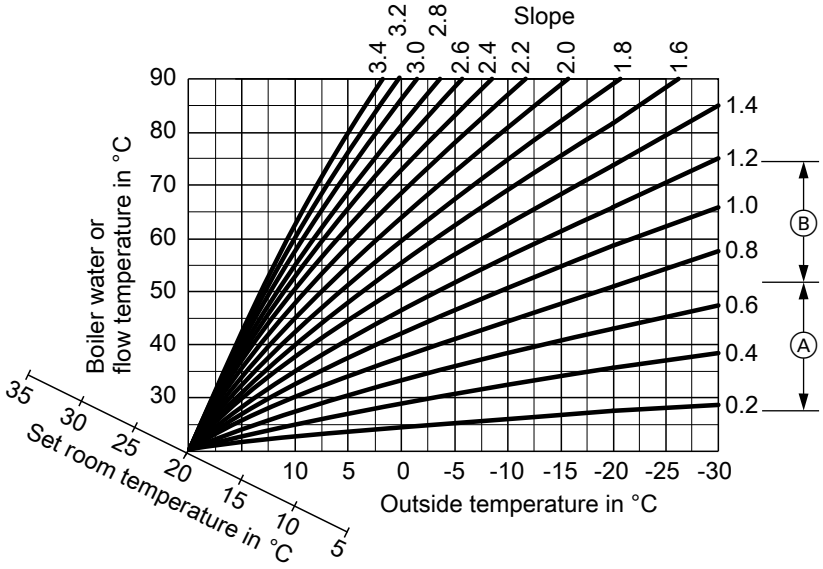
The heating curves illustrate the relationship between the outside temperature and the boiler water or flow temperature.
To put it simply, the lower the outside temperature, the higher the boiler water or flow temperature.
The room temperature, again, depends on the boiler water or the flow temperature.

Note
If the heating system includes heating circuits with mixers, then the flow temperature of the heating circuit without mixer is higher by a selected differential (8 K in the delivered condition) than the flow temperature of the heating circuits with mixers.
The differential temperature can be changed at coding address 9F.

Settings in the delivered condition:
- Slope = 1.4
- Level = 0

5692 857 GB

Further details regarding the individual steps (cont.)



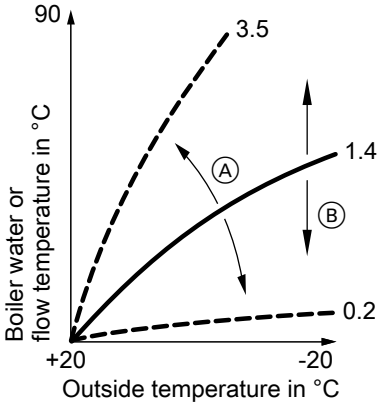
Ⓐ Heating curve slope for underfloor heating systems

Ⓑ Heating curve slope for low temperature heating systems (according to the Energy Savings Order [Germany])

5692 857 GB

Further details regarding the individual steps (cont.)

Changing the slope and level



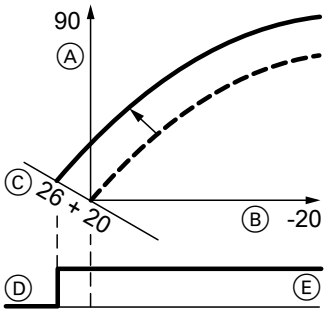
Ⓐ Changing the slope
Ⓑ Changing the level (vertical parallel offset of the heating curve)

Extended menu:

1. ☰:
2. **"Heating"**
3. Select heating circuit.
4. **"Heating curve"**
5. **"Slope"** or **"Level"**
6. Select heating curve according to the system requirements.

Adjusting the set room temperature

Standard room temperature



Example 1: Adjustment of the standard room temperature from 20 to 26°C

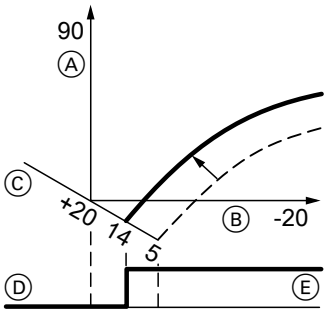
Ⓐ Boiler water temperature or flow temperature in °C
Ⓑ Outside temperature in °C
Ⓒ Set room temperature in °C
Ⓓ Heating circuit pump "OFF"
Ⓔ Heating circuit pump "ON"

Adjustment of the standard room temperature:

Operating instructions

Further details regarding the individual steps (cont.)

Reduced room temperature



Example 2: Adjustment of reduced room temperature from 5 °C to 14 °C

Ⓐ Boiler water temperature or flow temperature in °C
Ⓑ Outside temperature in °C
Ⓒ Set room temperature in °C
Ⓓ Heating circuit pump "OFF"
Ⓔ Heating circuit pump "ON"

Adjustment of the reduced room temperature:

Operating instructions

Connecting the control unit to the LON system (only for weather-compensated control units)

The LON communication module (accessories) must be plugged in.

Installation instructions
LON communication module

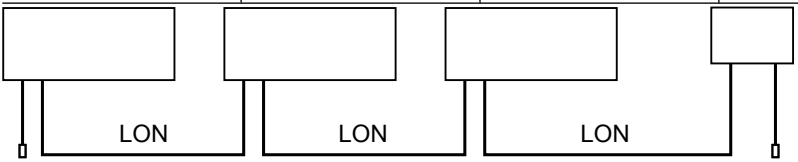
Note
The data transfer via LON can take several minutes.

Note
*In the same LON system, the same number **cannot** be allocated twice.*
***Only one Vitotronic** may be programmed as fault manager.*

Single boiler system with Vitotronic 200-H and Vitocom 300 (example)

Set the LON subscriber numbers and further functions via code 2 (see the following table).

Further details regarding the individual steps (cont.)

Boiler control unit	Vitotronic 200-H	Vitotronic 200-H	Vitocom
			
Subscriber no. 1 Code "77:1"	Subscriber no. 10 Code "77:10"	Subscriber no. 11 **Set** code "77:11"	Subscriber no. 99
Control unit is fault manager Code "79:1"	Control unit is not fault manager Code "79:0"	Control unit is not fault manager Code "79:0"	Device is fault manager
Control unit transmits the time Code "7b:1"	The control unit receives the time **Set** code "81:3"	The control unit receives the time **Set** code "81:3"	Device receives the time
Control unit transmits outside temperature **Set** code "97:2"	The control unit receives the outside temperature **Set** code "97:1"	The control unit receives the outside temperature **Set** code "97:1"	—
LON subscriber fault monitoring Code "9C:20"	LON subscriber fault monitoring Code "9C:20"	LON subscriber fault monitoring Code "9C:20"	—

Carrying out a LON subscriber check

Communication with the system devices connected to the fault manager is tested with a subscriber check.

Preconditions:
- The control unit must be programmed as **fault manager** (code "79:1")
- The LON subscriber number must be programmed in all control units (see page 36)
- The LON subscriber list in the fault manager must be up to date (see page 36)

Carrying out a subscriber check:

1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Service functions"**
3. **"Subscriber check"**

Further details regarding the individual steps (cont.)

4. Select subscriber (e.g. subscriber 10).
   The subscriber check for the selected subscriber is introduced.
   - Successfully tested subscribers are designated with **"OK"**.
   - Unsuccessfully tested subscribers are designated with **"Not OK"**.

   Note
   *To carry out a new subscriber check, create a new subscriber list with menu item **"Delete list?"***

Note
*If the subscriber check is carried out by another control unit, the subscriber number and **"Wink"** are shown on the display for approx. 1 min.*

Scanning and resetting the Service display

After the limits specified in coding addresses "21" and "23" have been reached, the red fault indicator flashes and the following appears on the programming unit display:
- On a constant temperature control unit:
  The specified hours run or the specified interval with clock symbol "🕘" (subject to setting) and "🔧"
- On a weather-compensated control unit:
  "Service" and "🔧"

Scanning and resetting service

Press **OK** to acknowledge a service message.

Note
An acknowledged service message that was not reset reappears:
- *On a weather-compensated control unit, on the following Monday.*
- *On a constant temperature control unit, after seven days.*

After a service has been carried out (reset service)

Weather-compensated control unit

1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Service functions"**
3. **"Service reset"**

   Note
   The selected service parameters for hours run and time interval restart at 0.

Further details regarding the individual steps (cont.)

Constant temperature control unit

Reset code 24:1 to 24:0.

Note
The selected service parameters for hours run and time interval restart at 0.

Instructing the system user

The system installer must hand the operating instructions to the system user and instruct him/her in the operation of the system.

Calling up coding level 1

Calling up coding level 1

Note

- *On weather-compensated control units, codes are displayed as plain text.*
- *Codes that have no function due to the heating system equipment level or the setting of other codes are not displayed.*
- *Heating systems with one heating circuit without mixer and one or two heating circuits with mixer:*
  The heating circuit without a mixer is designated ***"Heating circuit 1"*** *and the heating circuits with mixer as* ***"Heating circuit 2"*** *or* ***"Heating circuit 3"****.*
  If the heating circuits were given individual designations, the selected designation and ***"HC1"****,* ***"HC2"*** *or* ***"HC3"*** *appear instead.*

Weather-compensated control unit:

1. Press **OK** and ☰ simultaneously for approx. 4 s.

2. **"Coding level 1"**

3. Select group of required coding address:
   - **"General"**
   - **"Boiler"**
   - **"DHW"**
   - **"Solar"**
   - **"Heating circuit 1/2/3"**
   - **"All cod. or solar"**
     In this group, all coding addresses from coding level 1 (except the coding addresses from the **"Solar"** group) are displayed in ascending order.

4. Select coding address.

5. Select value according to the following tables and confirm with **OK**.

6. **If you want to reset all codes to their delivered condition:**
   Select **"Standard setting"** in **"Coding level 1"**.

   Note
   This also resets codes from coding level 2.

Constant temperature control unit:

1. Press **OK** and ☰ simultaneously for approx. 4 s.

2. With ▸, select **"①"** for coding level 1 and confirm with **OK**.
   "**I**" flashes on the display for the coding addresses in group 1.

3. Select group of the required coding address with ▲/▼. For example, "1" for group "General" (see following section):
   Confirm selected group with **OK**.

4. Select coding address with ▲/▼.

5. Select value according to the following tables with ▲/▼ and confirm with **OK**.

Calling up coding level 1 (cont.)

6. **If you want to reset all codes to their delivered condition:**
   Select ▸ **"⑦"** and confirm with **OK**.
   When "⊣" flashes, confirm with **OK**.

Note
This also resets codes from coding level 2.

General/Group 1

"General" - select for weather-compensated control units (see page 39).
"1" - select for constant temperature control units (see page 39).

Coding

Coding in the delivered condition		Possible change	
System design			
00:1	System version 1: One heating circuit without mixer (A1), without DHW heating	00:2 to 00:10	For system schemes, see the following table:

Value address 00: ...	System version	Description
2	1	One heating circuit without mixer (heating circuit 1), with DHW heating (code is adjusted automatically)
3	2, 3	One heating circuit with mixer (heating circuit 2), without DHW heating
4	2, 3	One heating circuit with mixer (heating circuit 2), with DHW heating
5	2, 3	One heating circuit without mixer (heating circuit 1) and one heating circuit with mixer (heating circuit 2), without DHW heating (code is adjusted automatically)
6	2, 3	One heating circuit without mixer (heating circuit 1) and one heating circuit with mixer (heating circuit 2), with DHW heating (code is adjusted automatically)
7	4	One heating circuit with mixer (heating circuit 2) and one heating circuit with mixer (heating circuit 3), without DHW heating
8	4	One heating circuit with mixer (heating circuit 2) and one heating circuit with mixer (heating circuit 3), with DHW heating

5692 857 GB

General/Group 1 (cont.)

Value address 00: ...	System version	Description
9	4	One heating circuit without mixer (heating circuit 1), one heating circuit with mixer (heating circuit 2) and one heating circuit with mixer (heating circuit 3), without DHW heating (code is adjusted automatically)
10	4	One heating circuit without mixer (heating circuit 1), one heating circuit with mixer (heating circuit 2) and one heating circuit with mixer (heating circuit 3), with DHW heating (code is adjusted automatically)

Coding in the delivered condition		Possible change	
Internal circulation pump function			
51:0	Internal circulation pump always starts when there is a heat demand	51:1	System with low loss header: When there is a heat demand, the internal circulation pump only starts when the burner is operational (with pump run-on)
		51:2	System with heating water buffer cylinder: When there is a heat demand, the internal circulation pump only starts when the burner is operational (with pump run-on)
Subscriber no.			
77:1	LON subscriber number (only for weather-compensated control units)	77:2 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - 98 = Vitotronic 200-H 99 = Vitocom ***Note*** *Allocate each number only* ***once****.*

General/Group 1 (cont.)

Coding in the delivered condition		Possible change	
Detached house/apartment building			
7F:1	Detached house (only for weather-compensated control units)	7F:0	Apartment building Separate adjustment of holiday program and time program for DHW heating, as option
Lock out controls			
8F:0	All control elements active	8F:1	All control elements locked out
		8F:2	Only standard settings can be controlled
Set flow temperature for ext. demand			
9b:70	Set flow temperature for external demand 70 °C	9b:0 to 9b:127	Set flow temperature for external demand adjustable from 0 to 127 °C (limited by boiler-specific parameters)

Boiler/Group 2

"Boiler" - select for weather-compensated control units (see page 39).
"2" - select for constant temperature control units (see page 39).

Coding

Coding in the delivered condition		Possible change	
Single/multi-boiler system			
01:1	Do not adjust (only for constant temperature control units)		
Burner service in 100 hours			
21:0	No service interval (hours run) selected	21:1 to 21:100	The number of hours run before the burner should be serviced is adjustable from 100 to 10 000 h One adjusting step ≙ 100 h

5692 857 GB

Boiler/Group 2 (cont.)

Coding in the delivered condition		Possible change	
Service interval in months			
23:0	No time interval for burner service	23:1 to 23:24	Interval adjustable from 1 to 24 months
Service status			
24:0	No display **"Service"** indication	24:1	Display **"Service"** indication (address is automatically set and must be manually reset after the service)
Filling/Venting			
2F:0	Venting program/fill program disabled	2F:1	Venting program enabled
		2F:2	Fill program enabled

DHW/Group 3

"DHW" - select for weather-compensated control units (see page 39).
"3" - select for constant temperature control units (see page 39).

Coding

Coding in the delivered condition		Possible change	
Set DHW temp reheat suppression			
67:40	For solar DHW heating: Set DHW temperature 40 °C. Reheating is suppressed above the selected set temperature (DHW heating blocked by the boiler). Cannot be adjusted on gas condensing combi boilers.	67:0 to 67:95	Set DHW temperature adjustable from 0 to 95 °C (limited by boiler-specific parameters)

DHW/Group 3 (cont.)

Coding in the delivered condition		Possible change	
Enable DHW circulation pump			
73:0	DHW circulation pump: "ON" according to time program (only for weather-compensated control units and gas condensing boilers)	73:1 to 73:6	"ON" from once per hour for 5 min up to 6 times per hour for 5 min during the time program
		73:7	Constantly "ON"

Solar/Group 4

"Solar" - select for weather-compensated control units (see page 39).
"4" - select for constant temperature control units (see page 39).

Note
The solar group is only displayed if a solar control module, type SM1, is connected.

Coding

Coding in the delivered condition		Possible change	
Speed control collector pump			
02:0	Solar circuit pump is not speed-controlled	02:1	Solar circuit pump is speed-controlled with wave pack control
		02:2	Solar circuit pump is speed-controlled with PWM control
Cylinder maximum temperature			
08:60	The solar circuit pump will stop when the actual cylinder temperature reaches 60 °C (maximum cylinder temperature).	08:10 to 08:90	The maximum cylinder temperature can be adjusted from 10 to 90 °C

5692 857 GB

Solar/Group 4 (cont.)

Coding in the delivered condition		Possible change	
Reducing stagnation time			
0A:5	To protect the system components and heat transfer medium, the speed of the solar circuit pump is reduced when the differential between the actual cylinder temperature and set cylinder temperature is less than 5 K.	0A:0 to 0A:40	The differential between the set cylinder temperature and the start point for reducing the stagnation time can be adjusted from 0 to 40 K.
Nominal flow rate			
0F:70	The flow rate in the collector circuit at the maximum pump speed is set to 7 l/min.	0F:1 to 0F:255	Flow rate in the collector circuit adjustable from 0.1 to 25.5 l/min
Extended control functions			
20:0	No extended control functions enabled	20:1	Auxiliary function for DHW heating
		20:2	Differential temperature control 2
		20:3	Differential temperature control 2 and auxiliary function
		20:4	Differential temperature control 2 for central heating backup
		20:5	Thermostat function
		20:6	Thermostat function and auxiliary function
		20:7	Solar heating via external heat exchanger without additional temperature sensor
		20:8	Solar heating via external heat exchanger with additional temperature sensor
		20:9	Solar heating of two DHW cylinders

5692 857 GB

Heating circuit 1, heating circuit 2, heating circuit 3/Group 5

"Heating circuit ..." - select for weather-compensated control units (see page 39).
"5" - select for constant temperature control units (see page 39).

Coding

Coding in the delivered condition		**Possible change**	
Summer eco function outside temperature			
A5:5	With heating circuit pump logic function (economy circuit): Heating circuit pump "OFF" when the outside temperature (AT) is 1 K higher than the set room temperature (RT_{set}) $AT > RT_{set} + 1$ K (only for weather-compensated control units)	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump "OFF"; see the following table

Parameter address A5:...	**With heating circuit pump logic function: Heating circuit pump "OFF"**
1	$AT > RT_{set} + 5$ K
2	$AT > RT_{set} + 4$ K
3	$AT > RT_{set} + 3$ K
4	$AT > RT_{set} + 2$ K
5	$AT > RT_{set} + 1$ K
6	$AT > RT_{set}$
7 to 15	$AT > RT_{set} - 1$ K $AT > RT_{set} - 9$ K

5692 857 GB

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Summer eco function absolute			
A6:36	Extended economy function **disabled** (only for weather-compensated control units)	A6:5 to A6:35	Extended economy control enabled, i.e. the burner and heating circuit pump will be stopped and the mixer closed at a variable value, adjustable between 5 and 35 °C plus 1 °C. The base value is the adjusted outside temperature. This value is based on the actual outside temperature and a time constant that takes the cooling down of an average building into consideration.
Mixer eco function			
A7:0	Without mixer economy function (only for a weather-compensated control unit and heating circuit with mixer)	A7:1	With mixer economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": ■ If a mixer has been closed for longer than 20 min. Heating circuit pump "ON": ■ If the mixer changes to control function ■ If there is a risk of frost
Pump idle time transition red. mode			
A9:7	With pump idle time: Heating circuit pump "OFF" if the set value is altered through a change in operating mode or through a change in the set room temperature (only for weather-compensated control units)	A9:0	Without pump idle time
		A9:1 to A9:15	With pump idle time; adjustable from 1 to 15

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Weather-compensated/room temperature hook-up			
b0:0	With remote control: Heating mode/reduced mode: Weather-compensated (only for weather-compensated control units; change the code only for the heating circuit with mixer)	b0:1	Heating mode: weather-compensated Reduced mode: with room temperature hook-up
		b0:2	Heating mode: with room temperature hook-up Reduced mode: weather-compensated
		b0:3	Heating mode/reduced mode: with room temperature hook-up
Summer eco function room temperature			
b5:0	With remote control: No room temperature-dependent heating circuit pump logic function (only for weather-compensated control units; change the code only for the heating circuit with mixer)	b5:1 to b5:8	Heating circuit pump logic function, see the following table:

Parameter address b5:...	With heating circuit pump logic function: Heating circuit pump "OFF"	Heating circuit pump "ON"
1	$RT_{actual} > RT_{set} + 5$ K	$RT_{actual} < RT_{set} + 4$ K
2	$RT_{actual} > RT_{set} + 4$ K	$RT_{actual} < RT_{set} + 3$ K
3	$RT_{actual} > RT_{set} + 3$ K	$RT_{actual} < RT_{set} + 2$ K
4	$RT_{actual} > RT_{set} + 2$ K	$RT_{actual} < RT_{set} + 1$ K
5	$RT_{actual} > RT_{set} + 1$ K	$RT_{actual} < RT_{set}$
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1$ K
7	$RT_{actual} > RT_{set} - 1$ K	$RT_{actual} < RT_{set} - 2$ K
8	$RT_{actual} > RT_{set} - 2$ K	$RT_{actual} < RT_{set} - 3$ K

Coding in the delivered condition		Possible change	
Flow temperature minimum limit			
C5:20	Electronic minimum flow temperature limit 20 °C (only for weather-compensated control units)	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters)

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Flow temperature maximum limit			
C6:74	Electronic maximum flow temperature limit 74 °C (only for weather-compensated control units)	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters)
Heating program - changeover			
d5:0	The external heating program changeover changes the heating program to "Constant operation with reduced room temperature" or "Standby mode" (only for weather-compensated control units)	d5:1	The external heating program changeover changes to "Constant operation with standard room temperature" (independent of coding address 3A, 3b and 3C)
Ext. heating program changeover to heating circuit			
d8:0	No heating program changeover via extension EA1	d8:1	Heating program changeover via input DE1 at extension EA1
		d8:2	Heating program changeover via input DE2 at extension EA1
		d8:3	Heating program changeover via input DE3 at extension EA1
Max. pump speed in standard mode			
E6:...	Maximum speed of the variable speed heating circuit pump in % of the max. speed in standard mode. Value is defaulted by boiler-specific parameters (only for weather-compensated control units).	E6:0 to E6:100	Maximum speed adjustable from 0 to 100 %

▶▶

5692 857 GB

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Min. pump speed			
E7:30	Minimum speed of the variable speed heating circuit pump: 30 % of the maximum speed (only for weather-compensated control units)	E7:0 to E7:100	Minimum speed adjustable from 0 to 100 % of the maximum speed
Screed function			
F1:0	Screed drying function disabled (only for weather-compensated control units)	F1:1 to F1:6	Screed drying function adjustable in accordance with 6 optional temperature/time profiles (see page 126)
		F1:15	Constant flow temperature 20 °C
Party mode time limit			
F2:8	Time limit for party mode or external heating program changeover via key: 8 h (only for weather-compensated control units)[*1]	F2:0	No time limit for party mode[*1]
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h[*1]
Pump control in "Only DHW"			
F6:25	In the "Only DHW" operating mode, the internal circulation pump is permanently ON (only for constant temperature control units)	F6:0	In the "Only DHW" operating mode, the internal circulation pump is permanently OFF
		F6:1 to F6:24	In the "Only DHW" operating mode, the internal circulation pump will be started for 10 min each time, 1 to 24 times per day.

[*1] *Party mode ends **automatically** in the "Heating and DHW" program, when the system changes over to operation with standard room temperature.*

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Pump control in "Standby mode"			
F7:25	In "Standby mode", the internal circulation pump is permanently ON (only for constant temperature control units)	F7:0	In "Standby mode", the internal circulation pump is permanently OFF
		F7:1 to F7:24	In "Standby mode", the internal circulation pump will be started for 10 min each time 1 to 24 times per day.
Start temperature raising			
F8:-5	Temperature limit for terminating the reduced mode -5 °C, see example on page 129. Observe the setting of coding address "A3" (only for weather-compensated control units)	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60 °C
		F8:-61	Function disabled
End temperature raising			
F9:-14	Temperature limit for raising the reduced set room temp. -14 °C, see example on page 129. (only for weather-compensated control units)	F9:+10 to F9:-60	Temperature limit for raising the set room temperature to the value selected for standard mode adjustable from +10 to -60 °C
Increase set flow temperature			
FA:20	Raising the set boiler water temperature or the set flow temperature when changing from operation with reduced room temperature to operation with standard room temperature, by 20 %. See example on page 130 (only for weather-compensated control units)	FA:0 to FA:50	Temperature rise adjustable from 0 to 50 %

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Duration set flow temperature increase			
Fb:30	Duration for raising the set boiler water temperature or the set flow temperature (see coding address "FA") 60 min. See example on page 130 (only for weather-compensated control units)	Fb:0 to Fb:150	Duration adjustable from 0 to 300 min; 1 step ≙ 2 min

Calling up coding level 2

Calling up coding level 2

Note

- *In coding level 2, all codes are accessible, including the codes from coding level 1.*
- *Codes that have no function due to the heating system equipment level or the setting of other codes are not displayed.*
- *Heating systems with one heating circuit without mixer and one or two heating circuits with mixer:*
  The heating circuit without a mixer is designated ***"Heating circuit 1"*** *and the heating circuits with mixer as* ***"Heating circuit 2"*** *or* ***"Heating circuit 3"****.*
  If the heating circuits were given individual designations, the selected designation and ***"HC1"****,* ***"HC2"*** *or* ***"HC3"*** *appear instead.*

Weather-compensated control unit:

1. Press **OK** and ☰ simultaneously for approx. 4 s.

2. Press **OK** and ⮌ simultaneously for approx. 4 s.

3. **"Coding level 2"**

4. Select group of required coding address:
   - **"General"**
   - **"Boiler"**
   - **"DHW"**
   - **"Solar"**
   - **"Heating circuit 1/2/3"**
   - **"All cod. or solar"**
     In this group, all coding addresses (except the coding addresses from the **"Solar"** group) are displayed in ascending order.

5. Select coding address.

6. Select value according to the following tables and confirm with **"OK"**.

7. **If you want to reset all codes to their delivered condition:**
   Select **"Standard setting"** in **"Coding level 2"**.

   Note
   This also resets codes from coding level 1.

Constant temperature control unit:

1. Press **OK** and ☰ simultaneously for approx. 4 s.

2. Press **OK** and ⮌ simultaneously for approx. 4 s.

3. With ▸, select **"②"** for coding level 2 and confirm with **OK**.
   "**I**" flashes on the display for the coding addresses in group 1.

Calling up coding level 2 (cont.)

4. Select group of the required coding address with ▲/▼. For example, "1" for group "General" (see following section):
   Confirm selected group with **OK**.

5. Select coding address with ▲/▼.

6. Select value according to the following tables with ▲/▼ and confirm with **OK**.

7. **If you want to reset all codes to their delivered condition:**
   Select ▶ **"⑦"** and confirm with **OK**.
   When "⊢" flashes, confirm with **OK**.

   Note
   This also resets codes from coding level 1.

General/Group 1

"General" - select for weather-compensated control units (see page 53).
"1" - select for constant temperature control units (see page 53).

Coding

Coding in the delivered condition		Possible change	
00:1	System version 1: One heating circuit without mixer (A1), without DHW heating	00:2 to 00:10	For system schemes, see the following table:

Value address 00: ...	System version	Description
2	1	One heating circuit without mixer (heating circuit 1), with DHW heating (code is adjusted automatically)
3	2, 3	One heating circuit with mixer (heating circuit 2), without DHW heating
4	2, 3	One heating circuit with mixer (heating circuit 2), with DHW heating
5	2, 3	One heating circuit without mixer (heating circuit 1) and one heating circuit with mixer (heating circuit 2), without DHW heating (code is adjusted automatically)
6	2, 3	One heating circuit without mixer (heating circuit 1) and one heating circuit with mixer (heating circuit 2), with DHW heating (code is adjusted automatically)

5692 857 GB

General/Group 1 (cont.)

Value address 00: ...	System version	Description
7	4	One heating circuit with mixer (heating circuit 2) and one heating circuit with mixer (heating circuit 3), without DHW heating
8	4	One heating circuit with mixer (heating circuit 2) and one heating circuit with mixer (heating circuit 3), with DHW heating
9	4	One heating circuit without mixer (heating circuit 1), one heating circuit with mixer (heating circuit 2) and one heating circuit with mixer (heating circuit 3), without DHW heating (code is adjusted automatically)
10	4	One heating circuit without mixer (heating circuit 1), one heating circuit with mixer (heating circuit 2) and one heating circuit with mixer (heating circuit 3), with DHW heating (code is adjusted automatically)

Coding in the delivered condition		Possible change	
11:≠9	No access to the coding addresses for the combustion controller parameters	11:9	Access open to the coding addresses for the combustion controller parameters
25:0	Without outside temperature sensor (for constant temperature control units)	25:1	With outside temperature sensor (automatic recognition)
32:0	Without extension AM1	32:1	With extension AM1 (automatic recognition)
33:1	Function output A1 at extension AM1: Heating circuit pump	33:0	Function output A1: DHW circulation pump
		33:2	Function output A1: Circulation pump for cylinder heating
34:0	Function output A2 at extension AM1: DHW circulation pump	34:1	Function output A2: Heating circuit pump
		34:2	Function output A2: Circulation pump for cylinder heating
35:0	Without extension EA1	35:1	With extension EA1 (automatic recognition)

General/Group 1 (cont.)

Coding in the delivered condition		Possible change	
36:0	Function output 157 at extension EA1: Fault message	36:1	Function output 157: Feed pump
		36:2	Function output 157: DHW circulation pump
3A:0	Function input DE1 at extension EA1: without function	3A:1	Function input DE1: Heating program changeover
		3A:2	Function input DE1: External demand with set flow temperature. Function internal circulation pump: Coding address 3F
		3A:3	Function input DE1: External blocking. Function internal circulation pump: Coding address 3E
		3A:4	Function input DE1: External blocking with fault message input Function internal circulation pump: Coding address 3E
		3A:5	Function input DE1: Fault message input
		3A:6	Function input DE1: Brief operation, DHW circulation pump (pushbutton function). DHW circulation pump runtime adjustment: Coding address 3d

5692 857 GB

General/Group 1 (cont.)

Coding in the delivered condition		Possible change	
3b:0	Function input DE2 at extension EA1: without function	3b:1	Function input DE2: Heating program changeover
		3b:2	Function input DE2: External demand with set flow temperature. Function internal circulation pump: Coding address 3F
		3b:3	Function input DE2: External blocking. Function internal circulation pump: Coding address 3E
		3b:4	Function input DE2: External blocking with fault message input Function internal circulation pump: Coding address 3E
		3b:5	Function input DE2: Fault message input
		3b:6	Function input DE2: Brief operation, DHW circulation pump (pushbutton function). DHW circulation pump runtime adjustment: Coding address 3d

General/Group 1 (cont.)

Coding in the delivered condition		Possible change	
3C:0	Function input DE3 at extension EA1: without function	3C:1	Function input DE3: Heating program changeover
		3C:2	Function input DE3: External demand with set flow temperature. Function internal circulation pump: Coding address 3F
		3C:3	Function input DE3: External blocking. Function internal circulation pump: Coding address 3E
		3C:4	Function input DE3: External blocking with fault message input Function internal circulation pump: Coding address 3E
		3C:5	Function input DE3: Fault message input
		3C:6	Function input DE3: Brief operation, DHW circulation pump (pushbutton function). DHW circulation pump runtime adjustment: Coding address 3d
3D:5	DHW circulation pump runtime for short operation: 5 min	3D:1 to 3D:60	DHW circulation pump runtime adjustable from 1 to 60 min
3E:0	Internal circulation pump stays in control mode at signal "External blocking"	3E:1	Internal circulation pump stops at signal "External blocking"
		3E:2	Internal circulation pump starts at signal "External blocking"

5692 857 GB

General/Group 1 (cont.)

Coding in the delivered condition		Possible change	
3F:0	Internal circulation pump stays in control mode at signal "External demand"	3F:1	Internal circulation pump stops at signal "External demand"
		3F:2	Internal circulation pump starts at signal "External demand"
51:0	Internal circulation pump always starts when there is a heat demand	51:1	System with low loss header: When there is a heat demand, the internal circulation pump only starts when the burner is operational (with pump run-on)
		51:2	System with heating water buffer cylinder: When there is a heat demand, the internal circulation pump only starts when the burner is operational (with pump run-on)
52:0	Without flow temperature sensor for low loss header	52:1	With flow temperature sensor for low loss header (automatic recognition)
53:1	Function connection 28 of the internal extension: DHW circulation pump	53:0	Function connection 28: Central fault
		53:2	Function connection 28: External heating circuit pump (heating circuit 1)
		53:3	Function connection 28: External circulation pump for cylinder heating

▶▶

General/Group 1 (cont.)

Coding in the delivered condition		Possible change	
54:0	Without solar thermal system	54:1	With Vitosolic 100 (automatic recognition)
		54:2	With Vitosolic 200 (automatic recognition)
		54:3	With solar control module SM1 without auxiliary function (automatic recognition)
		54:4	With solar control module SM1 with auxiliary function, e.g. central heating backup (automatic recognition)
6E:50	Do not adjust		
76:0	Without LON communication module (only for weather-compensated control units)	76:1	With LON communication module (automatic recognition)
77:1	LON subscriber number (only for weather-compensated control units)	77:2 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - 98 = Vitotronic 200-H 99 = Vitocom ***Note*** *Allocate each number only* ***once****.*
79:1	With LON communication module: Control unit is fault manager (only for weather-compensated control units)	79:0	Control unit is not fault manager
7b:1	With LON communication module: The control unit transmits the time (only for weather-compensated control units)	7b:0	Does not transmit time

5692 857 GB

General/Group 1 (cont.)

Coding in the delivered condition		Possible change	
7F:1	Detached house (only for weather-compensated control units)	7F:0	Apartment building Separate adjustment of holiday program and time program for DHW heating, as option
80:6	A fault message is displayed, providing a fault is active for at least 30 s	80:0	Immediate fault message
		80:2 to 80:199	The minimum fault duration before a fault message is issued is adjustable from 10 s to 995 s; 1 step ≙ 5 s
81:1	Automatic summer/winter time changeover	81:0	Manual summer/winter time changeover
		81:2	Use of the radio clock receiver (automatic recognition)
		81:3	With LON communication module: The control unit receives the time
82:0	Operation with natural gas	82:1	Operation with LPG (only adjustable if coding address 11:9 has been set)
86:0	Do not adjust		
87:0	Do not adjust		
88:0	Temperature displayed in °C (Celsius)	88:1	Temperature displayed in °F (Fahrenheit)
8A:175	Do not adjust!		
8F:0	All control elements active	8F:1	All control elements locked out
		8F:2	Only standard settings can be controlled
90:128	Time constant for calculating the adjusted outside temperature 21.3 h	90:1 to 90:199	Fast (low values) or slow (high values) matching of the flow temperature, subject to the set value when the outside temperature changes; 1 step ≙ 10 min
94:0	Without Open Therm extension	94:1	With Open Therm extension (automatic recognition)

General/Group 1 (cont.)

Coding in the delivered condition		Possible change	
95:0	Without Vitocom 100 communication interface	95:1	With Vitocom 100 communication interface (automatic recognition)
97:0	With LON communication module: The outside temperature of the sensor connected to the control unit is utilised internally (only for weather-compensated control units)	97:1	The control unit receives the outside temperature
		97:2	The control unit transmits the outside temperature to the Vitotronic 200-H
98:1	Viessmann system number (in conjunction with monitoring several systems via Vitocom 300)	98:1 to 98:5	System number adjustable from 1 to 5
99:0	Do not adjust		
9A:0	Do not adjust		
9b:70	Set flow temperature for external demand 70 °C	9b:0 to 9b:127	Set flow temperature for external demand adjustable from 0 to 127 °C (limited by boiler-specific parameters)
9C:20	Monitoring LON subscribers. If a subscriber fails to respond, the values specified inside the control unit will be used after 20 min. Only then will a fault message be issued. (only for weather-compensated control units)	9C:0	No monitoring
		9C:5 to 9C:60	Time adjustable from 5 to 60 min
9F:8	Differential temperature 8 K; only in conjunction with the mixer circuit (only for weather-compensated control units)	9F:0 to 9F:40	Differential temperature adjustable from 0 to 40 K

Boiler/Group 2

"Boiler" - select for weather-compensated control units (see page 53).

5692 857 GB

Boiler/Group 2 (cont.)

"2" - select for constant temperature control units (see page 53).

Coding

Coding in the delivered condition		Possible change	
01:1	Do not adjust (only for constant temperature control units)		
04:1	Minimum burner pause subject to the boiler load (specified by boiler coding card)	04:0	Minimum burner pause set permanently (specified by boiler coding card)
06:...	Maximum limit of the boiler water temperature, specified in °C by the boiler coding card	06:20 to 06:127	Maximum limit of the boiler water temperature within the ranges specified by the boiler
0d:0	Do not adjust		
0E:0	Do not adjust		
13:1	Do not adjust		
14:1	Do not adjust		
15:1	Do not adjust		
21:0	No service interval (hours run) selected	21:1 to 21:100	The number of hours run before the burner should be serviced is adjustable from 100 to 10 000 h One adjusting step ≙ 100 h
23:0	No time interval for burner service	23:1 to 23:24	Interval adjustable from 1 to 24 months
24:0	No display **"Service"** indication	24:1	Display **"Service"** indication (address is automatically set and must be manually reset after the service)
28:0	No burner interval ignition	28:1 to 28:24	Time interval adjustable from 1 to 24 h. The burner is force-started once every 30 s (only when operating with LPG)
2E:0	Do not adjust		

Boiler/Group 2 (cont.)

Coding in the delivered condition		Possible change	
2F:0	Venting program/fill program disabled	2F:1	Venting program enabled
		2F:2	Fill program enabled
30:1	Internal variable speed circulation pump (automatic adjustment)	30:0	Internal circulation pump without variable speed (e.g. temporarily for service)
31:...	Set speed in % of the internal circulation pump when operated as boiler circuit pump, specified by the boiler coding card	31:0 to 31:100	Set speed adjustable from 0 to 100 %
38:0	Status burner control unit: Operational (no fault)	38:≠0	Status burner control unit: Fault

DHW/Group 3

"DHW" - select for weather-compensated control units (see page 53).
"3" - select for constant temperature control units (see page 53).

Coding

Coding in the delivered condition		Possible change	
56:0	Set DHW temperature adjustable from 10 to 60 °C	56:1	Set DHW temperature adjustable from 10 to above 60 °C ***Note*** *Maximum value subject to boiler coding card. Observe the max. permissible DHW temperature.*
58:0	Without auxiliary function for DHW heating	58:10 to 58:60	Entry of a 2nd set DHW temperature; adjustable from 10 to 60 °C (note coding address "56" and "63")
59:0	Cylinder heating: Starting point -2.5 K Stopping point +2.5 K	59:1 to 59:10	Starting point adjustable from 1 to 10 K below the set value

5692 857 GB

DHW/Group 3 (cont.)

Coding in the delivered condition		Possible change	
5b:0	DHW cylinder directly connected to the boiler	5b:1	DHW cylinder connected downstream of the low loss header
5E:0	Circulation pump for cylinder heating stays in control mode at signal "External blocking"	5E:1	Circulation pump for cylinder heating stops at signal "External blocking"
		5E:2	Circulation pump for cylinder heating starts at signal "External blocking"
5F:0	Circulation pump for cylinder heating stays in control mode at signal "External demand"	5F:1	Circulation pump for cylinder heating stops at signal "External demand"
		5F:2	Circulation pump for cylinder heating starts at signal "External demand"
60:20	During DHW heating, the boiler water temperature is max. 20 K higher than the set DHW temperature	60:5 to 60:25	The difference between the boiler water temperature and the set DHW temperature is adjustable from 5 to 25 K
62:2	Circulation pump with 2 min run-on time after cylinder heating	62:0	Circulation pump without run-on
		62:1 to 62:15	Run-on time adjustable from 1 to 15 min
63:0	Without auxiliary function for DHW heating (only for constant temperature control units)	63:1	Auxiliary function: 1 x daily
		63:2 to 63:14	Every 2 days to every 14 days
		63:15	2 x daily
65:...	Information regarding the type of diverter valve (not adjustable): 0: No diverter valve 1: Viessmann diverter valve 2: Wilo diverter valve 3: Grundfos diverter valve		

DHW/Group 3 (cont.)

Coding in the delivered condition		Possible change	
67:40	For solar DHW heating: Set DHW temperature 40 °C. Reheating is suppressed above the selected set temperature (DHW heating blocked by the boiler).	67:0 to 67:95	Set DHW temperature adjustable from 0 to 95 °C (limited by boiler-specific parameters)
6C:100	Set speed; internal circulation pump with DHW heating 100 %	6C:0 to 6C:100	Set speed adjustable from 0 to 100 %
6d:0	Draw-off function disabled (only for gas condensing combi boiler	6d:1 to 6d:15	Draw-off function with a runtime of 1 to 15 min
6F:...	Maximum output for DHW heating in %, specified by the boiler coding card	6F:0 to 6F:100	Max. output for DHW heating adjustable from min. output to 100 %
71:0	DHW circulation pump: "ON" in accordance with the time program (only for weather-compensated control units)	71:1	"OFF" during DHW heating to the first set value
		71:2	"ON" during DHW heating to the first set value
72:0	DHW circulation pump: "ON" in accordance with the time program (only for weather-compensated control units)	72:1	"OFF" during DHW heating to the second set value
		72:2	"ON" during DHW heating to the second set value
73:0	DHW circulation pump: "ON" in accordance with the time program (only for weather-compensated control units)	73:1 to 73:6	"ON" from once per hour for 5 min up to 6 times per hour for 5 min during the time program
		73:7	Constantly "ON"

Solar/Group 4

"Solar" - select for weather-compensated control units (see page 53).
"4" - select for constant temperature control units (see page 53).

Note
The solar group is only displayed if a solar control module, type SM1, is connected.

5692 857 GB

Solar/Group 4 (cont.)

Coding

Coding in the delivered condition		Possible change	
00:8	The solar circuit pump starts when the collector temperature exceeds the actual cylinder temperature by 8 K.	00:2 to 00:30	The differential between the actual cylinder temperature and the start point for the solar circuit pump can be adjusted from 2 to 30 K.
01:4	The solar circuit pump stops when the differential between the collector temperature and the actual cylinder temperature is less than 4 K.	01:1 to 01:29	The differential between the actual cylinder temperature and the stop point for the solar circuit pump can be adjusted from 1 to 29 K.
02:0	Solar circuit pump is not speed-controlled	02:1	Solar circuit pump is speed-controlled with wave pack control
		02:2	Solar circuit pump is speed-controlled with PWM control
03:10	The temperature differential between the collector temperature and actual cylinder temperature is regulated to 10 K.	03:5 to 03:20	The differential temperature control between collector temperature and actual cylinder temperature can be adjusted from 5 to 20 K
04:5	Controller amplification of the speed control 5 %/K.	04:1 to 04:10	Controller amplification adjustable from 1 to 10 %/K
05:10	Minimum speed of the solar circuit pump 10 % of the maximum speed	05:1 to 05:100	Minimum speed of the solar circuit pump is adjustable from 1 to 100 %
06:80	Maximum speed of the solar circuit pump 80 % of the maximum possible speed	06:1 to 06:100	Maximum speed of the solar circuit pump is adjustable from 1 to 100 %.

Solar/Group 4 (cont.)

Coding in the delivered condition		Possible change	
07:0	Interval function of the solar circuit pump switched OFF	07:1	Interval function of the solar circuit pump switched ON. To capture the collector temperature more accurately, the solar circuit pump starts for short cycles.
08:60	The solar circuit pump will stop when the actual cylinder temperature reaches 60 °C (maximum cylinder temperature).	08:10 to 08:90	The maximum cylinder temperature can be adjusted from 10 to 90 °C
09:130	The solar circuit pump stops if the collector temperature reaches 130 °C (maximum collector temperature to protect the system components).	09:20 to 09:200	The temperature can be adjusted from 20 to 200 °C
0A:5	To protect the system components and heat transfer medium, the speed of the solar circuit pump is reduced when the differential between the actual cylinder temperature and set cylinder temperature is less than 5 K.	0A:0 to 0A:40	The differential between the set cylinder temperature and the start point for reducing the stagnation time can be adjusted from 0 to 40 K.
0b:0	Collector frost protection function switched OFF	0b:1	Collector frost protection function switched ON (not required with Viessmann heat transfer medium).
0C:1	Delta T monitoring switched ON. No flow rate captured in the collector circuit, or flow rate too low.	0C:0	Delta T monitoring switched OFF.

5692 857 GB

Solar/Group 4 (cont.)

Coding in the delivered condition		Possible change	
0d:1	Night circulation monitoring switched ON. Unintentional flow rate is captured in the collector circuit (e.g. at night).	0d:0	Night circulation monitoring switched OFF.
0E:1	Calculation of solar yield with Viessmann heat transfer medium	0E:2	Calculation of solar yield with water as heat transfer medium (do not select as operation is only possible with Viessmann heat transfer medium)
		0E:0	Calculation of solar yield switched OFF
0F:70	The flow rate in the collector circuit at the maximum pump speed is set to 7 l/min.	0F:1 to 0F:255	Flow rate in the collector circuit adjustable from 0.1 to 25.5 l/min
10:0	Target temperature control switched OFF (see coding address 11)	10:1	Target temperature control switched ON
11:50	Set cylinder temperature for solar 50 °C. ■ Target temperature control switched ON (code 10:1): Temperature at which the solar heated water in the DHW cylinder is to be stratified. ■ Extended control functions set to heat two DHW cylinders (code 20:8): If the actual temperature of a DHW cylinder reaches the selected set cylinder temperature, heating is transferred to the second DHW cylinder.	11:10 to 11:90	The set cylinder temperature for solar can be adjusted from 10 to 90 °C

Solar/Group 4 (cont.)

Coding in the delivered condition		Possible change	
12:20	Minimum collector temperature 20 °C. The solar circuit pump is not started until the minimum collector temperature set at the collector temperature sensor is exceeded.	12:0	Minimum collector temperature function switched OFF
		12:1 to 12:90	The minimum collector temperature is adjustable from 1 to 90 °C
20:0	No extended control functions enabled	20:1	Auxiliary function for DHW heating
		20:2	Differential temperature control 2
		20:3	Differential temperature control 2 and auxiliary function
		20:4	Differential temperature control 2 for central heating backup
		20:5	Thermostat function
		20:6	Thermostat function and auxiliary function
		20:7	Solar heating via external heat exchanger without additional temperature sensor
		20:8	Solar heating via external heat exchanger with additional temperature sensor
		20:9	Solar heating of two DHW cylinders
22:8	Start temperature differential for central heating backup: 8 K. Switching output [22] is switched ON when the temperature at sensor [7] exceeds the temperature at sensor [10] by the selected value.	22:2 to 22:30	Start temperature differential for central heating backup is adjustable from 21 to 30 K

5692 857 GB

Solar/Group 4 (cont.)

Coding in the delivered condition		Possible change	
23:4	Stop temperature differential for central heating backup: 4 K. Switching output [22] is switched OFF when the temperature at sensor [7] falls below the stop point. The stop point is the sum of the temperature at sensor [10] and the value selected for the stop temperature differential.	23:2 to 23:30	Stop temperature differential for central heating backup is adjustable from 1 to 29 K
24:40	Start temperature for thermostat function 40 °C. Start temperature for thermostat function ≤ stop temperature for thermostat function: Thermostat function e.g. for reheating. Switching output [22] is switched ON when the temperature at sensor [7] falls below the start temperature for the thermostat function. Start temperature for thermostat function > stop temperature for thermostat function: Thermostat function e.g. for utilising excess heat. Switching output [22] is switched ON when the temperature at sensor [7] exceeds the start temperature for the thermostat function.	24:0 to 24:100	Start temperature for thermostat function is adjustable from 0 to 100 K

Solar/Group 4 (cont.)

Coding in the delivered condition		Possible change	
25:50	Stop temperature for thermostat function 50 °C. Start temperature for thermostat function ≤ stop temperature for thermostat function: Thermostat function e.g. for reheating. Switching output [22] is switched OFF when the temperature at sensor [7] exceeds the start temperature for the thermostat function. Start temperature for thermostat function > stop temperature for thermostat function: Thermostat function e.g. for utilising excess heat. Switching output [22] is switched OFF when the temperature at sensor [7] falls below the start temperature for the thermostat function.	25:0 to 25:100	Start temperature for thermostat function is adjustable from 0 to 100 K
26:1	Priority for DHW cylinder 1 – with alternate heating Only when setting code 20:8.	26:0	Priority for DHW cylinder 1 – without alternate heating
		26:2	Priority for DHW cylinder 2 – without alternate heating
		26:3	Priority for DHW cylinder 2 – with alternate heating
		26:4	Alternate heating without priority for one DHW cylinder

Solar/Group 4 (cont.)

Coding in the delivered condition		Possible change	
27:15	Alternate heating time 15 min. The DHW cylinder without priority is heated at most for the duration of the set alternate heating time if the DHW cylinder with priority is heated up.	27:5 to 27:60	The alternate heating time is adjustable from 5 to 60 min
28:3	Alternate pause duration 3 min. After the set alternate heating time for the DHW cylinder without priority has expired, the rise in collector temperature is captured during the alternate heating time.	28:1 to 28:60	The alternate pause duration is adjustable from 1 to 60 min

Heating circuit 1, heating circuit 2, heating circuit 3/Group 5

"Heating circuit ..." - select for weather-compensated control units (see page 53).
"5" - select for constant temperature control units (see page 53).

Coding

Coding in the delivered condition		Possible change	
A0:0	Without remote control (only for weather-compensated control units)	A0:1	With Vitotrol 200A (automatic recognition)
		A0:2	With Vitotrol 300A (automatic recognition)

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
A1:0	All settings that can be made at the remote control can be executed (only for Vitotrol 200A and constant temperature control units)	A1:1	Only party mode can be set at the remote control
A3:2	Outside temperature below 1 °C: Heating circuit pump "ON" Outside temperature above 3 °C: Heating circuit pump "OFF"	A3:-9 to A3:15	Heating circuit pump "ON/OFF" (see the following table)

Please note
If a value below 1 °C is selected, there is a risk of pipes outside the thermal envelope of the building freezing up.
The standby mode, in particular, should be taken into consideration, e.g. during holidays.

Parameter Address A3:...	Heating circuit pump "ON"	"OFF"
-9	-10 °C	-8 °C
-8	-9 °C	-7 °C
-7	-8 °C	-6 °C
-6	-7 °C	-5 °C
-5	-6 °C	-4 °C
-4	-5 °C	-3 °C
-3	-4 °C	-2 °C
-2	-3 °C	-1 °C
-1	-2 °C	0 °C
0	-1 °C	1 °C
1	0 °C	2 °C
2 to 15	1 °C to 14 °C	3 °C to 16 °C

5692 857 GB

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
A4:0	With frost protection (only for weather-compensated control units)	A4:1	No frost protection; this setting is only possible if code "A3:-9" has been selected. ***Note*** *See "Please note" regarding coding address "A3"*
A5:5	With heating circuit pump logic function (economy circuit): Heating circuit pump "OFF" when the outside temperature (AT) is 1 K higher than the set room temperature (RT_{set}) $AT > RT_{set} + 1$ K (only for weather-compensated control units)	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump "OFF"; see the following table

Parameter address A5:...	With heating circuit pump logic function: Heating circuit pump "OFF"
1	$AT > RT_{set} + 5$ K
2	$AT > RT_{set} + 4$ K
3	$AT > RT_{set} + 3$ K
4	$AT > RT_{set} + 2$ K
5	$AT > RT_{set} + 1$ K
6	$AT > RT_{set}$
7 to 15	$AT > RT_{set} - 1$ K $AT > RT_{set} - 9$ K

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
A6:36	Extended economy function **disabled** (only for weather-compensated control units)	A6:5 to A6:35	Extended economy control enabled, i.e. the burner and heating circuit pump will be stopped and the mixer closed at a variable value, adjustable between 5 and 35 °C plus 1 °C. The base value is the adjusted outside temperature. This value is based on the actual outside temperature and a time constant that takes the cooling down of an average building into consideration.
A7:0	Without mixer economy function (only for a weather-compensated control unit and heating circuit with mixer)	A7:1	With mixer economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": ■ If a mixer has been closed for longer than 20 min. Heating pump "ON": ■ If the mixer changes to control function ■ If there is a risk of frost
A8:1	Heating circuit with mixer creates a demand for the internal circulation pump (only for weather-compensated control units)	A8:0	Heating circuit with mixer creates no demand for the internal circulation pump
A9:7	With pump idle time: Heating circuit pump "OFF" if the set value is altered through a change in operating mode or through a change in the set room temperature (only for weather-compensated control units)	A9:0	Without pump idle time
		A9:1 to A9:15	With pump idle time; adjustable from 1 to 15

5692 857 GB

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
b0:0	With remote control: Heating mode/reduced mode: Weather-compensated (only for weather-compensated control units; change the code only for the heating circuit with mixer)	b0:1	Heating mode: weather-compensated Reduced mode: with room temperature hook-up
		b0:2	Heating mode: with room temperature hook-up Reduced mode: weather-compensated
		b0:3	Heating mode/reduced mode: with room temperature hook-up
b2:8	With remote control and for the heating circuit, operation with room temperature hook-up must be programmed: Room influence factor 8 (only for weather-compensated control units; change the code only for the heating circuit with mixer)	b2:0	Without room influence
		b2:1 to b2:64	Room influence factor adjustable from 1 to 64
b5:0	With remote control: No room temperature-dependent heating circuit pump logic function (only for weather-compensated control units; change the code only for the heating circuit with mixer)	b5:1 to b5:8	Heating circuit pump logic function, see the following table:

Parameter address b5:...	With heating circuit pump logic function: Heating circuit pump "OFF"	Heating circuit pump "ON"
1	$RT_{actual} > RT_{set} + 5$ K	$RT_{actual} < RT_{set} + 4$ K
2	$RT_{actual} > RT_{set} + 4$ K	$RT_{actual} < RT_{set} + 3$ K
3	$RT_{actual} > RT_{set} + 3$ K	$RT_{actual} < RT_{set} + 2$ K
4	$RT_{actual} > RT_{set} + 2$ K	$RT_{actual} < RT_{set} + 1$ K
5	$RT_{actual} > RT_{set} + 1$ K	$RT_{actual} < RT_{set}$
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1$ K
7	$RT_{actual} > RT_{set} - 1$ K	$RT_{actual} < RT_{set} - 2$ K
8	$RT_{actual} > RT_{set} - 2$ K	$RT_{actual} < RT_{set} - 3$ K

5692 857 GB

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
C5:20	Electronic minimum flow temperature limit 20 °C (only for weather-compensated control units)	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters)
C6:74	Electronic maximum flow temperature limit 74 °C (only for weather-compensated control units)	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters)
d3:14	Heating curve slope = 1.4	d3:2 to d3:35	Heating curve slope adjustable from 0.2 to 3.5 (see page 32)
d4:0	Heating curve level = 0	d4:–13 to d4:40	Heating curve level adjustable from –13 to 40 (see page 32)
d5:0	The external heating program changeover changes the heating program to "Constant operation with reduced room temperature" or "Standby mode" (only for weather-compensated control units)	d5:1	The external heating program changeover changes to "Constant operation with standard room temperature" (independent of coding address 3A, 3b and 3C)
d6:0	Heating circuit pump stays in control mode at signal "External blocking"	d6:1	Heating circuit pump stops at signal "External blocking" (subject to coding addresses 3A, 3b and 3C)
		d6:2	Heating circuit pump starts at signal "External blocking" (subject to coding addresses 3A, 3b and 3C)
d7:0	Heating circuit pump stays in control mode at signal "External demand"	d7:1	Heating circuit pump stops at signal "External demand" (subject to coding addresses 3A, 3b and 3C)
		d7:2	Heating circuit pump starts at signal "External demand" (subject to coding addresses 3A, 3b and 3C)

5692 857 GB

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
d8:0	No heating program changeover via extension EA1	d8:1	Heating program changeover via input DE1 at extension EA1
		d8:2	Heating program changeover via input DE2 at extension EA1
		d8:3	Heating program changeover via input DE3 at extension EA1
E1:0	Do not adjust		
E2:50	With remote control: No display correction for the actual room temperature (only for weather-compensated control units)	E2:0 to E2:49	Display correction –5 K to Display correction –0.1 K
		E2:51 to E2:99	Display correction +0.1 K to Display correction +4.9 K
E5:0	Without external variable speed heating circuit pump (only for weather-compensated control units)	E5:1	With external variable speed heating circuit pump (automatic recognition)
E6:...	Maximum speed of the variable speed heating circuit pump in % of the max. speed in standard mode. Value is defaulted by boiler-specific parameters (only for weather-compensated control units).	E6:0 to E6:100	Maximum speed adjustable from 0 to 100 %
E7:30	Minimum speed of the variable speed heating circuit pump: 30 % of the maximum speed (only for weather-compensated control units)	E7:0 to E7:100	Minimum speed adjustable from 0 to 100 % of the maximum speed

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
E8:1	Minimum speed in operation with reduced room temperature subject to the setting in coding address "E9" (only for weather-compensated control units)	E8:0	Speed subject to the setting in coding address "E7"
E9:45	Speed of the variable speed heating circuit pump: 45 % of the maximum speed during operation with reduced room temperature (only for weather-compensated control units)	E9:0 to E9:100	Speed adjustable from 0 to 100 % of the maximum speed during operation with reduced room temperature
F1:0	Screed drying function disabled (only for weather-compensated control units)	F1:1 to F1:6	Screed drying function adjustable in accordance with 6 optional temperature/time profiles (see page 126)
		F1:15	Constant flow temperature 20 °C
F2:8	Time limit for party mode or external heating program changeover via key: 8 h (only for weather-compensated control units)[*1]	F2:0	No time limit for party mode[*1]
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h[*1]
F5:12	Run-on time of the internal circulation pump in heating mode: 12 min (only for constant temperature control units)	F5:0	No run-on time for the internal circulation pump
		F5:1 to F5:20	Run-on time of the internal circulation pump adjustable from 1 to 20 min

[*1] *Party mode ends **automatically** in the "Heating and DHW" program, when the system changes over to operation with standard room temperature.*

5692 857 GB

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
F6:25	In the "Only DHW" operating mode, the internal circulation pump is permanently ON (only for constant temperature control units)	F6:0	In the "Only DHW" operating mode, the internal circulation pump is permanently OFF
		F6:1 to F6:24	In the "Only DHW" operating mode, the internal circulation pump will be started for 10 min each time, 1 to 24 times per day.
F7:25	In "Standby mode", the internal circulation pump is permanently ON (only for constant temperature control units)	F7:0	In "Standby mode", the internal circulation pump is permanently OFF
		F7:1 to F7:24	In "Standby mode", the internal circulation pump will be started for 10 min each time 1 to 24 times per day.
F8:-5	Temperature limit for terminating the reduced mode -5 ºC, see example on page 129. Observe the setting of coding address "A3" (only for weather-compensated control units)	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60 °C
		F8:-61	Function disabled
F9:-14	Temperature limit for raising the reduced set room temp. -14 ºC, see example on page 129. (only for weather-compensated control units)	F9:+10 to F9:-60	Temperature limit for raising the set room temperature to the value selected for standard mode adjustable from +10 to -60 °C

Heating circuit 1, heating circuit 2, heating… (cont.)

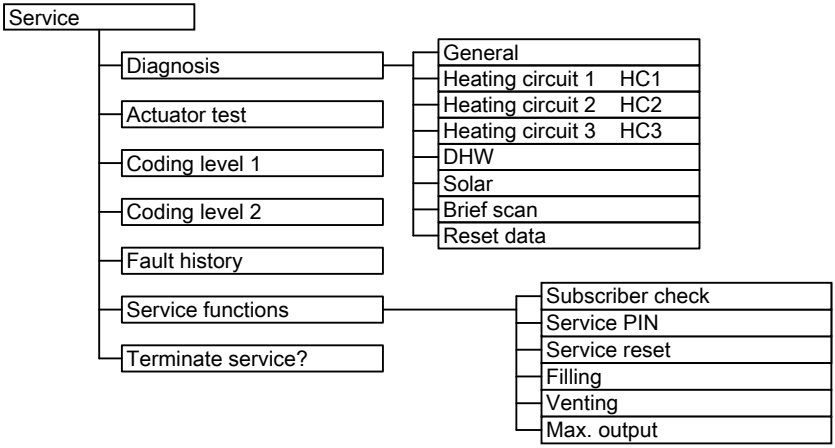
Coding in the delivered condition		Possible change	
FA:20	Raising the set boiler water temperature or the set flow temperature when changing from operation with reduced room temperature to operation with standard room temperature, by 20 %. See example on page 130 (only for weather-compensated control units)	FA:0 to FA:50	Temperature rise adjustable from 0 to 50 %
Fb:30	Duration for raising the set boiler water temperature or the set flow temperature (see coding address "FA") 60 min. See example on page 130 (only for weather-compensated control units)	Fb:0 to Fb:150	Duration adjustable from 0 to 300 min; 1 step ≙ 2 min

Calling up the service menu

Only for weather-compensated control units

Press **OK** and ☰: simultaneously for approx. 4 s.

Service menu overview



Diagnosis

Scanning operating data

- Weather-compensated control unit:
  Operating data can be scanned in six areas. See **"Diagnosis"** in the service menu overview.
  Operating data on heating circuits with mixers and solar can only be scanned if the components are installed in the system.
  For further information on operating data, see chapter "Brief scan".
- Constant temperature control unit:
  Operating data can be scanned in the **"i"** menu.

Operating instructions

For further information on operating data, see chapter "Brief scan".

Diagnosis (cont.)

Note
"- - -" *appears on the display if a sensor that has been scanned is faulty.*

Calling up operating data

Weather-compensated control unit

1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Diagnosis"**
3. Select required group, e.g. **"General"**.

Constant temperature control unit

Operating instructions, chapter "Scanning information"

Resetting operating data

Saved operating data (e.g. hours run) can be reset to 0.
The value "Adjusted outside temp" is reset to the actual value.

Weather-compensated control unit

1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Diagnosis"**
3. **"Reset data"**
4. Select required value (e.g. **"Burner starts"**) or **"All details"**.

Constant temperature control unit

Operating instructions, chapter "Scanning information"

Brief scan

In the brief scan, you can scan temperatures, software versions and connected components, for example.

Weather-compensated control unit

1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Diagnosis"**
3. **"Brief scan"**.
4. Press **OK**.
   The display shows 9 lines with 6 fields each.

Diagnosis (cont.)

For an explanation of the relevant values in the individual lines and fields, see the following table:

Line (brief scan)	Field					
	1	2	3	4	5	6
1:	Software version Control unit		Equipment version		Burner control unit version	
2:	System schemes 01 to 10		Number of KM BUS subscribers	Maximum demand temperature		
3:	Switching state of flow switch (only for combi boilers)	Software version Programming unit	Software version Mixer extension 0: No mixer extension	Software version Solar control module SM1	Software version LON module	0
4:	Software version Burner control unit		Type Burner control unit		Appliance type	
5:	0: no external demand 1: external demand	0: no external blocking 1: external blocking		External hook-up 0 - 10 V Display in °C 0: no external hook-up		
6:	Number of LON subscribers		Check digit	Max. output Details in %		

Diagnosis (cont.)

Line (brief scan)	Field					
	1	2	3	4	5	6
7:	**Heating circuit A1 (without mixer)** Remote control 0: without 1: Vitotrol 200A 2: Vitotrol 300A or Vitohome	Software version Remote control 0: no remote control	**Heating circuit M2 (with mixer)** Remote control 0: without 1: Vitotrol 200A 2: Vitotrol 300A or Vitohome	Software version Remote control 0: no remote control	**Heating circuit M3 (with mixer)** Remote control 0: without 1: Vitotrol 200A 2: Vitotrol 300A or Vitohome	Software version Remote control 0: no remote control
8:	**Internal circulation pump** Variable speed pump 0: without 1: Wilo 2: Grundfos	Software version variable speed pump 0: no variable speed pump	**Heating circuit pump, heating circuit M2** Variable speed pump 0: without 1: Wilo 2: Grundfos	Software version Variable speed pump 0: no variable speed pump	**Heating circuit pump, heating circuit M3** Variable speed pump 0: without 1: Wilo 2: Grundfos	Software version Variable speed pump 0: no variable speed pump
9:	Internal details for calibration				Software version Extension AM1	Software version Extension EA1

Constant temperature control unit

1. Press **OK** and ☰ simultaneously for approx. 4 s.
   "🔧" flashes on the display.

2. Confirm with **OK**.

3. Select the required scan with ▲/▼. For example, "b" for "Max. output" (see following table):

Diagnosis (cont.)

4. Confirm selected scan with **OK**.

For explanations of individual scans, see the following table:

Brief scan	Display				
0	Switching state of flow switch (only for combi boilers)	System schemes 1 to 2	Software version Control unit		Software version Programming unit
1	Software version Solar control module SM1	Software version Burner control unit		External extension software version 0: no external extension	Software version Multi-boiler control unit
E			External hook-up 0 - 10 V Display in °C 0: no external hook-up		
3			Set boiler water temperature		
A			Highest demand temperature		
4		Burner control unit type		Appliance type	
5			Set cylinder temperature		
b	Diverter valve status 0: not available 1: Heating 2: Central position 3: DHW heating		Max. output in %		
C		Boiler coding card (hexadecimal)			
c		Version Appliance		Version Burner control unit	

Diagnosis (cont.)

Brief scan	Display				
0	0	0	0	0	0
d				Variable speed pump 0 w/o 1 Wilo 2 Grundfos	Software version Variable speed pump 0: no variable speed pump
F ①	Code 53 setting	Internal details for calibration			
	Extension AM1				
F ②	Software version	Output A1 configuration (value corresponds to code 33 setting)	Output A1 switching state 0: OFF 1: ON	Output A2 configuration (value corresponds to code 34 setting)	Output A2 switching state 0: OFF 1: ON
	Extension EA1				
F ③	Output 157 configuration (value corresponds to code 36 setting)	Output 157 switching state 0: OFF 1: ON	Input DE1 switching state 0: open 1: closed	Input DE2 switching state 0: open 1: closed	Input DE3 switching state 0: open 1: closed
F ④	Software version		External hook-up 0 - 10 V Display in %		
	Solar control module SM1				
F ⑤	Stagnation time of the solar thermal system in h				
F ⑥	Night circulation of the solar thermal system (number)				
F ⑦	Monitoring reheating suppression for heating (number)				
F ⑧				Solar central heating backup 0: disabled 1: enabled	Output 22 switching state 0: OFF 1: ON

5692 857 GB

Diagnosis (cont.)

Brief scan	Display				
8	8	8	8	8	8
	Open Therm extension (if installed)				
F ⑨	Software version	DHW heating status	External hook-up 0 - 10 V Display in %		

Checking outputs (relay test)

Weather-compensated control unit

1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Actuator test"**

The following relay outputs can be controlled subject to system design:

Display	Explanation
Start base load	Burner operates at minimum output; internal pump starts
Start full load	Burner operates at maximum output; internal pump starts
Start internal output	Internal output [20] (internal pump) enabled
Start valve heating	Diverter valve set to heating mode
Start valve centre	Diverter valve in central position (filling/draining)
Start valve cylinder	Diverter valve set to DHW mode
Start htg circ pump HC2	Heating circuit pump output enabled (extension to heating circuit with mixer)
Open mixer HC2	"Mixer open" output enabled (extension to heating circuit with mixer)
Close mixer HC2	"Mixer closed" output enabled (extension to heating circuit with mixer)
Start htg circ pump HC3	Heating circuit pump output enabled (extension to heating circuit with mixer)
Open mixer HC3	"Mixer open" output enabled (extension to heating circuit with mixer)
Close mixer HC3	"Mixer closed" output enabled (extension to heating circuit with mixer)
Start outp. int. exten. H1	Output at internal extension enabled
Start AM1 output 1	Output A1 at extension AM1 enabled
Start AM1 output 2	Output A2 at extension AM1 enabled
Start EA1 output 1	Contacts P - S at plug [157] for extension EA1 closed

Checking outputs (relay test) (cont.)

Display	Explanation
Start solar circuit pump	Solar circuit pump [24] output at solar control module SM1 enabled
Start solar circ pmp min	Solar circuit pump output at solar control module SM1 switched to minimum speed
Start solar circ pmp max	Solar circuit pump output at solar control module SM1 switched to maximum speed
Start sol. output [22]	Output [22] at solar control module SM1 enabled

Constant temperature control unit

1. Press **OK** and ☰ simultaneously for approx. 4 s.
   "🔧" flashes on the display.
2. Select ▶ "⇄" and confirm with **OK**.
3. Select required actuator (output) with ▲/▼ (see following table):
4. Confirm selected actuator with **OK**.
   The display shows the number for the activated actuator and "**ON**".

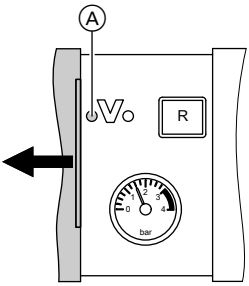
The following actuators (relay outputs) can be controlled subject to system design:

Display	Explanation
1	Burner operates at minimum output; internal pump starts
2	Burner operates at maximum output; internal pump starts
3	Internal output [20] (internal pump) is enabled
4	Diverter valve set to heating mode
5	Diverter valve in central position (filling/draining)
6	Diverter valve set to DHW mode
10	Internal extension output enabled
15	Solar circuit pump [24] output at solar control module SM1 enabled
16	Solar circuit pump output at solar control module SM1 switched to minimum speed
17	Solar circuit pump output at solar control module SM1 switched to maximum speed
18	Output [22] at solar control module SM1 enabled
19	Contacts P - S at plug [157] for extension EA1 closed
20	Output A1 at extension AM1 enabled
21	Output A2 at extension AM1 enabled

Fault display

Weather-compensated control unit

If there is a fault, the red fault indicator Ⓐ flashes. **"⚠"** flashes on the display and **"Fault"** is shown.



The fault code is displayed with **OK**. For an explanation of the fault code, see the following pages.
For some faults, the type of fault is also displayed in plain text.

Acknowledging a fault

Follow the instructions on the display.

Note
The fault message is shown in the standard display of the short menu.
A fault messaging facility, if connected, will be switched OFF.
If an acknowledged fault is not remedied, the fault message will be re-displayed the following day and the fault message facility restarted.

Calling up acknowledged faults

Select **"Fault"** in the standard menu. The current faults will be displayed in a list.

Calling up fault codes from the fault memory (fault history)

The 10 most recent faults (including resolved ones) are saved and can be scanned.
Faults are sorted by date.

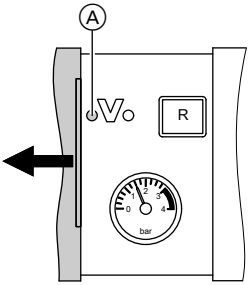
1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Fault history"**
3. **"Display?"**

5692 857 GB

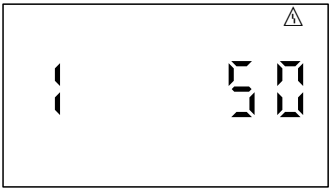
Fault display (cont.)

Constant temperature control unit

If there is a fault, the red fault indicator Ⓐ flashes. The two-digit fault code and (subject to the type of fault) **"⚠"** or **"⚠"** flash on the programming unit display.



Other current faults can be displayed with ▲/▼. For an explanation of the fault codes, see the following pages.



Example: Fault code "50"

Acknowledge fault

Press **OK**; the standard display is shown again.

A fault messaging facility, if connected, will be switched OFF.
If an acknowledged fault is not remedied, the fault message will be re-displayed the following day and the fault message facility restarted.

Calling up acknowledged faults

Press **OK** for approx. 4 s.
The 10 most recent faults (including resolved ones) are saved and can be scanned.

Calling up fault codes from the fault memory (fault history)

The 10 most recent faults (including those remedied) are saved and can be called up.
Faults are sorted by date.

1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. Select "⚠" and enable fault history with **OK**.
3. Select fault messages with ▲/▼.

5692 857 GB

Fault codes

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
10	X	X	Controls as if the outside temperature was 0 °C	Short circuit, outside temperature sensor	Check the outside temperature sensor (see page 105)
18	X	X	Controls as if the outside temperature was 0 °C	Lead break, outside temperature sensor	Check the outside temperature sensor (see page 105)
20	X	X	Regulates without flow temperature sensor (low loss header)	Short circuit, system flow temperature sensor	Check the low loss header sensor (see page 106)
28	X	X	Regulates without flow temperature sensor (low loss header)	Lead break, system flow temperature sensor	Check the low loss header sensor (see page 106)
30	X	X	Burner blocked	Short circuit, boiler water temperature sensor	Check the boiler water temperature sensor (see page 106)
38	X	X	Burner blocked	Lead break, boiler water temperature sensor	Check the boiler water temperature sensor (see page 106)
40		X	Mixer closes	Short circuit, flow temperature sensor, heating circuit 2 (with mixer)	Check flow temperature sensor
44		X	Mixer closes	Short circuit, flow temperature sensor, heating circuit 3 (with mixer)	Check flow temperature sensor

Fault codes (cont.)

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
48		X	Mixer closes	Lead break, flow temperature sensor, heating circuit 2 (with mixer)	Check flow temperature sensor
4C		X	Mixer closes	Lead break, flow temperature sensor, heating circuit 3 (with mixer)	Check flow temperature sensor
50	X	X	No DHW heating	Short circuit, cylinder temperature sensor or comfort sensor	Check the cylinder temperature sensor (see page 106) or comfort sensor (see page 108)
51	X	X	No DHW heating	Short circuit, outlet temperature sensor	Check sensor (see page 108)
58	X	X	No DHW heating	Lead break, cylinder temperature sensor or comfort sensor	Check the cylinder temperature sensor (see page 106) or comfort sensor (see page 108)
59	X	X	No DHW heating	Lead break, outlet temperature sensor	Check sensor (see page 108)
90	X	X	Control mode	Short circuit, temperature sensor [7]	Check sensor [7] on the solar control module
91	X	X	Control mode	Short circuit, temperature sensor [10]	Check sensor [10] on the solar control module.
92	X	X	No DHW heating	Short circuit, collector temperature sensor	Check temperature sensor [6] on the solar control module or the Vitosolic sensor

Fault codes (cont.)

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
93	X	X	Control mode	Short circuit, cylinder temperature sensor	Check temperature sensor at connection S3 to the Vitosolic 100.
94	X	X	No DHW heating	Short circuit, cylinder temperature sensor	Check temperature sensor [5] on the solar control module or the Vitosolic sensor
98	X	X	Control mode	Lead break, temperature sensor [7]	Check sensor [7] on the solar control module
99	X	X	Control mode	Lead break, temperature sensor [10]	Check sensor [10] on the solar control module.
9A	X	X	No DHW heating	Lead break, collector temperature sensor	Check temperature sensor [6] on the solar control module or the Vitosolic sensor
9b	X	X	Control mode	Lead break, cylinder temperature sensor	Check temperature sensor at connection S3 to the Vitosolic 100.
9C	X	X	No DHW heating	Lead break, cylinder temperature sensor	Check temperature sensor [5] on the solar control module or the Vitosolic sensor
9E	X	X	Control mode	No flow rate in the collector circuit or flow rate too low, or temperature limiter has responded	Check solar circuit pump and solar circuit. Acknowledge fault message.

Fault codes (cont.)

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
9F	X	X	Control mode	Solar control module or Vitosolic faulty	Replace solar control module or Vitosolic
A7		X	Control mode as per delivered condition	Programming unit faulty	Replace programming unit
b0	X	X	Burner blocked	Short circuit, flue gas temperature sensor	Check the flue gas temperature sensor
b1	X	X	Control mode as per delivered condition	Communication error, programming unit	Check connections and replace the programming unit if required
b5	X	X	Control mode as per delivered condition	Internal fault	Replace the control unit
b7	X	X	Burner blocked	Boiler coding card faulty	Plug in boiler coding card or replace if faulty
b8	X	X	Burner blocked	Lead break, flue gas temperature sensor	Check the flue gas temperature sensor
bA		X	Mixer regulates to 20 °C flow temperature.	Communication error, extension kit for heating circuit 2 (with mixer)	Check extension kit connections and code
bb		X	Mixer regulates to 20 °C flow temperature.	Communication error, extension kit for heating circuit 3 (with mixer)	Check extension kit connections and code

5692 857 GB

Fault codes (cont.)

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
bC		X	Control mode without remote control	Communication error, remote control Vitotrol heating circuit 1 (without mixer)	Check connections, lead, coding address "A0" and remote control settings (see page 132)
bd		X	Control mode without remote control	Communication error, remote control Vitotrol heating circuit 2 (with mixer)	Check connections, lead, coding address "A0" and remote control settings (see page 132)
bE		X	Control mode without remote control	Communication error, remote control Vitotrol heating circuit 3 (with mixer)	Check connections, lead, coding address "A0" and remote control settings (see page 132)
bF		X	Control mode	Incorrect LON communication module	Replace the LON communication module
C1	X	X	Control mode	Communication error extension EA1	Check electrical connections
C2	X	X	Control mode	Communication error, solar control module or Vitosolic	Check solar control module or Vitosolic
C3	X	X	Control mode	Extension AM1 communication error	Check electrical connections

Fault codes (cont.)

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
C4	X	X	Control mode	Communication error, Open Therm extension	Check Open Therm extension
C5	X	X	Control mode, max. pump speed	Communication error, variable speed internal pump	Check the setting of coding address "30"
C6		X	Control mode, max. pump speed	Communication error, external variable speed heating circuit pump, heating circuit 2 (with mixer)	Check setting of coding address "E5"
C7	X	X	Control mode, max. pump speed	Communication error, external variable speed heating circuit pump, heating circuit 1 (without mixer)	Check setting of coding address "E5"
C8		X	Control mode, max. pump speed	Communication error, external variable speed heating circuit pump, heating circuit 3 (with mixer)	Check setting of coding address "E5"
Cd	X	X	Control mode	Communication error, Vitocom 100 (KM BUS)	Check connections, Vitocom 100 and coding address "95"

Fault codes (cont.)

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
CE	X	X	Control mode	Communication error, ext. extension	Check electrical connections
CF		X	Control mode	Communication error, LON communication module	Replace the LON communication module
d6	X	X	Control mode	Input DE1 at extension EA1 reports a fault	Remove fault at the appliance concerned
d7	X	X	Control mode	Input DE2 at extension EA1 reports a fault	Remove fault at the appliance concerned
d8	X	X	Control mode	Input DE3 fault at extension EA1	Check connection to input DE3
dA		X	Control mode without room influence	Short circuit, room temperature sensor, heating circuit 1 (without mixer)	Check room temperature sensor, heating circuit 1
db		X	Control mode without room influence	Short circuit, room temperature sensor, heating circuit 2 (with mixer)	Check room temperature sensor, heating circuit 2
dC		X	Control mode without room influence	Short circuit, room temperature sensor, heating circuit 3 (with mixer)	Check room temperature sensor, heating circuit 3

Fault codes (cont.)

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
dd		X	Control mode without room influence	Lead break, room temperature sensor, heating circuit 1 (without mixer)	Check room temperature sensor for heating circuit 1 and remote control settings (see page 132).
dE		X	Control mode without room influence	Lead break, room temperature sensor, heating circuit 2 (with mixer)	Check room temperature sensor for heating circuit 2 and remote control settings (see page 132).
dF		X	Control mode without room influence	Lead break, room temperature sensor, heating circuit 3 (with mixer)	Check room temperature sensor for heating circuit 3 and remote control settings (see page 132).
E0		X	Control mode	Fault external LON subscriber	Check connections and LON subscribers
E1	X	X	Burner in a fault state	The ionisation current lies outside the permissible range	Check the ionisation electrode and cable. Press reset button **R**.
E2	X	X	Burner in a fault state	The ionisation current lies outside the permissible range	Check the ionisation electrode and cable. Press reset button **R**.
E3	X	X	Burner in a fault state	The ionisation current lies outside the permissible range	Check the ionisation electrode and cable. Press reset button **R**.
E4	X	X	Burner blocked	Fault, supply voltage 24 V	Replace the control unit.

Fault codes (cont.)

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
E5	X	X	Burner blocked	Fault, flame amplifier	Replace the control unit.
E7	X	X	Burner in a fault state	The ionisation current lies outside the permissible range during calibration	Check the ionisation electrode and cable. Press reset button **R**.
E8	X	X	Burner in a fault state	The ionisation current lies outside the permissible range	Check the ionisation electrode and cable. Press reset button **R**.
EA	X	X	Burner in a fault state	The ionisation current lies outside the permissible range during calibration	Check the ionisation electrode and cable. Press reset button **R**.
Eb	X	X	Burner in a fault state	Heat draw-off repeatedly too low during calibration	Initiate a heat draw-off. Switch the boiler OFF and ON again. Press reset button **R**.
EC	X	X	Burner in a fault state	Parameter fault during calibration	Press reset button **R** or Replace boiler coding card and press reset button **R**.
Ed	X	X	Burner in a fault state	Internal fault	Replace the control unit.

Fault codes (cont.)

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
EE	X	X	Burner in a fault state	Flame signal is not present or too weak at burner start	Check the ionisation electrode and connecting cable, measure the ionisation current, check the gas supply (gas pressure and gas flow limiter), check the gas train, ignition, ignition module, ignition electrodes and the condensate drain. Press reset button **R**.
EF	X	X	Burner in a fault state	The flame is lost immediately after it has built (during the safety time).	Check the gas supply (gas pressure and gas flow limiter), check the flue gas/ventilation air system for flue gas recirculation, check the ionisation electrode (replace if required). Press reset button **R**.
F0	X	X	Burner blocked	Internal fault	Replace the control unit.
F1	X	X	Burner in a fault state	Flue gas temperature limiter has responded.	Check the heating system fill level. Vent the system. Press reset button **R** after the flue system has cooled down.

Fault codes (cont.)

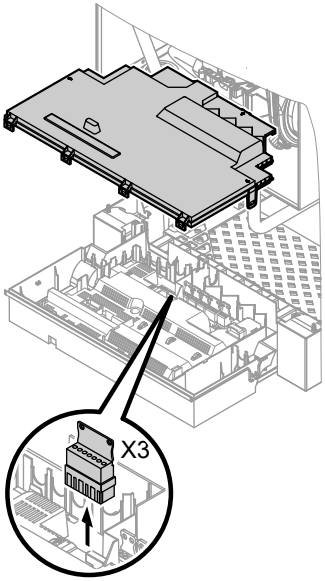
Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
F2	X	X	Burner in a fault state	The temperature limiter has responded.	Check the heating system fill level. Check the circulation pump. Vent the system. Check the temperature limiter and connecting cables. Press reset button **R**.
F3	X	X	Burner in a fault state	Flame signal is already present at burner start.	Check the ionisation electrode and connecting cable. Press reset button **R**.
F8	X	X	Burner in a fault state	The fuel valve closes too late.	Check the gas train. Check both control paths. Press reset button **R**.
F9	X	X	Burner in a fault state	Fan speed too low during burner start	Check the fan, the fan connecting cables and power supply; check the fan control. Press reset button **R**.
FA	X	X	Burner in a fault state	Fan not at standstill	Check the fan, fan connecting cables and fan control. Press reset button **R**.
FC	X	X	Burner in a fault state	Gas train faulty or faulty modulation valve control or flue gas path blocked	Check the gas train. Check flue gas system. Press reset button **R**.

Fault codes (cont.)

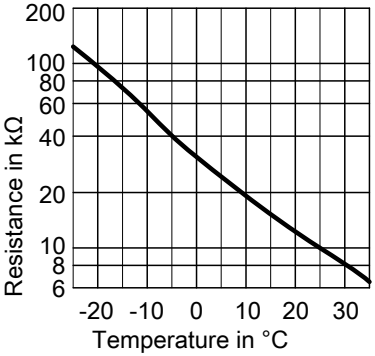
Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
Fd	X	X	Burner in a fault state	Fault, burner control unit	Check ignition electrodes and connecting cables. Check whether a strong interference (EMC) field exists near the appliance. Press reset button **R**. Replace control unit if the fault persists.
FE	X	X	Burner blocked or in a fault state	Boiler coding card or main PCB faulty	Press reset button **R**. Replace boiler coding card or control unit if the fault persists.
FF	X	X	Burner blocked or in a fault state	Internal fault or reset button **R** blocked	Start the appliance again. Replace the control unit if the appliance will not restart.

Repairs

Checking the outside temperature sensor (weather-compensated control unit)



1. Pull plug "X3" from the control unit.



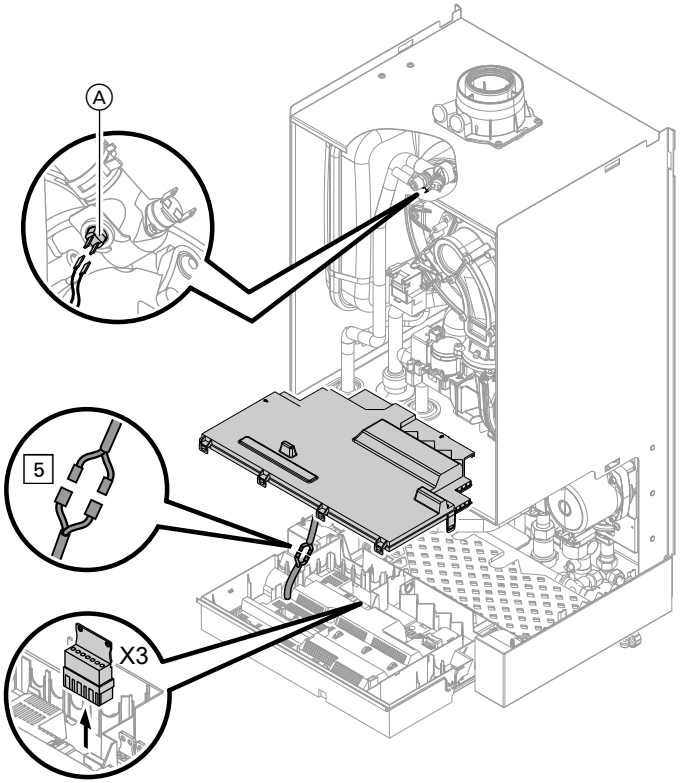
2. Test the resistance of the outside temperature sensor across terminals "X3.1" and "X3.2" on the disconnected plug and compare it with the curve.

3. Where actual values deviate severely from the curve values, disconnect the wires at the sensor and repeat test on the sensor itself.

4. Subject to result, replace the lead or the outside temperature sensor.

Repairs (cont.)

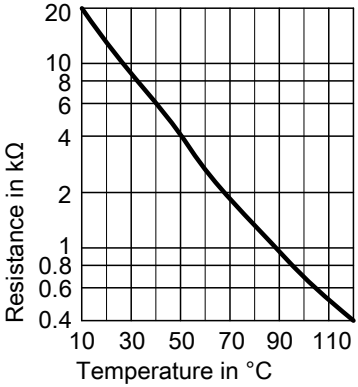
Checking the boiler temperature sensor, cylinder temperature sensor or flow temperature sensor of the low loss header



Repairs (cont.)

1. ■ **Boiler water temperature sensor**
   Pull the leads from boiler water temperature sensor Ⓐ and check the resistance.
   ■ **Cylinder temperature sensor**
   Pull plug [5] from the cable harness at the control unit and check the resistance.
   ■ **Low loss header flow temperature sensor**
   Pull plug "X3" from the control unit and check the resistance across terminals "X3.4" and "X3.5".

2. Check the sensor resistance and compare the actual values with the curve.

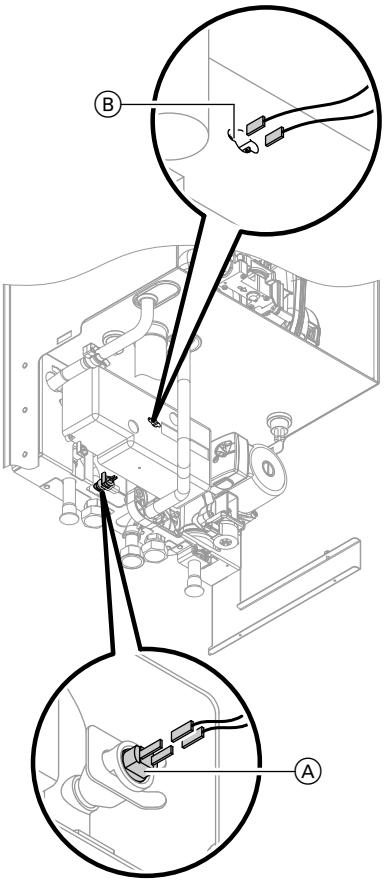


3. Replace the sensor in case of severe deviation.

Danger
The boiler water temperature sensor is immersed in the heating water (risk of scalding).
Drain the boiler on the heating water side before replacing the sensor.

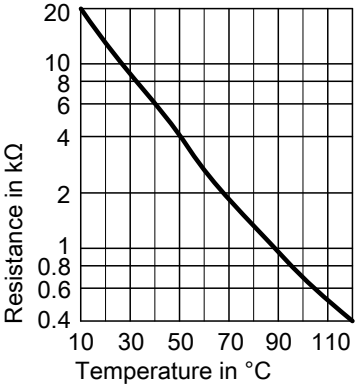
Repairs (cont.)

Checking the outlet temperature sensor or comfort sensor (gas combi boilers only)



1. Disconnect the leads from outlet temperature sensor Ⓐ or comfort sensor Ⓑ.
2. Check the sensor resistance and compare it with the curve.

Repairs (cont.)

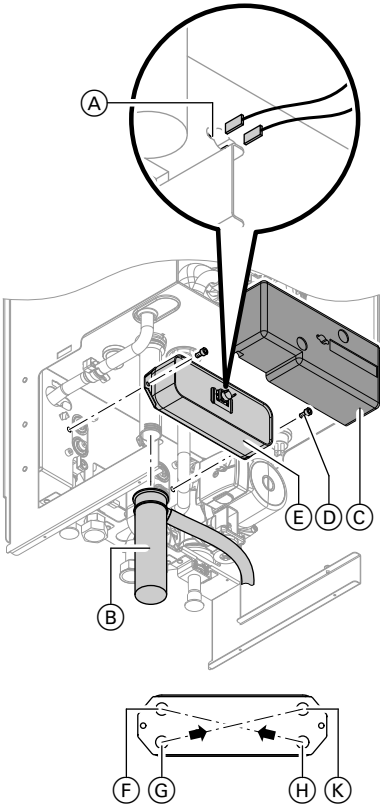


3. Replace the sensor in case of severe deviation.

Note
Water can leak when replacing the outlet temperature sensor. Close the cold water shut-off valve. Drain the DHW line and the plate heat exchanger (DHW side).

Repairs (cont.)

Checking the plate heat exchanger



Ⓕ Heating return
Ⓖ Cold water
Ⓗ Heating flow
Ⓚ DHW

1. Shut off and drain the boiler on its heating water and DHW side.
2. Release the side closures and pivot the control unit forward.
3. Pull the leads from comfort sensor Ⓐ.
4. Remove the retaining clip and siphon Ⓑ.
5. Remove thermal insulation Ⓒ.
6. Undo screws Ⓓ and remove plate heat exchanger Ⓔ through the front.

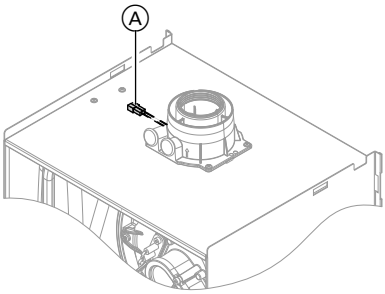
   Note
   During removal, small amounts of water may trickle out and escape from the plate heat exchanger.
7. Check the DHW side for scaling and if required clean or replace the plate heat exchanger.
8. Check the heating water side for contamination and if required clean or replace the plate heat exchanger.
9. Install in reverse order with new gaskets.
10. ⚠ **Danger**
    Escaping gas leads to a risk of explosion.
    Check gas equipment for tightness.

5692 857 GB

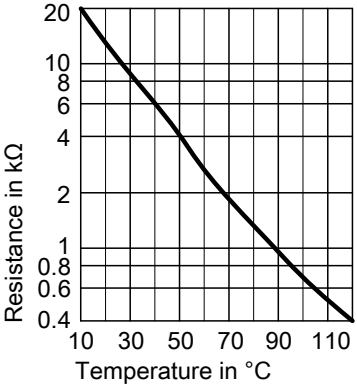
Repairs (cont.)

Checking the flue gas temperature sensor

The flue gas temperature sensor locks out the boiler when the permissible flue gas temperature is exceeded. Reset the interlock after the flue system has cooled down by pressing reset button **R**.



1. Pull the leads from flue gas temperature sensor Ⓐ.

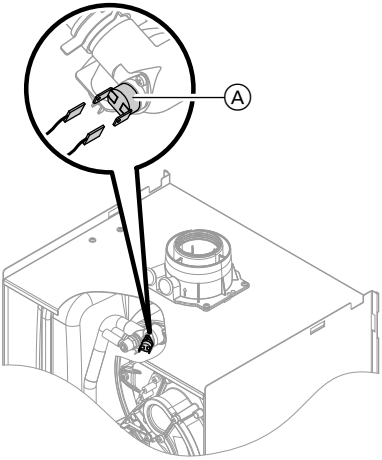


2. Check the sensor resistance and compare it with the curve.
3. Replace the sensor in case of severe deviation.

Checking the temperature limiter

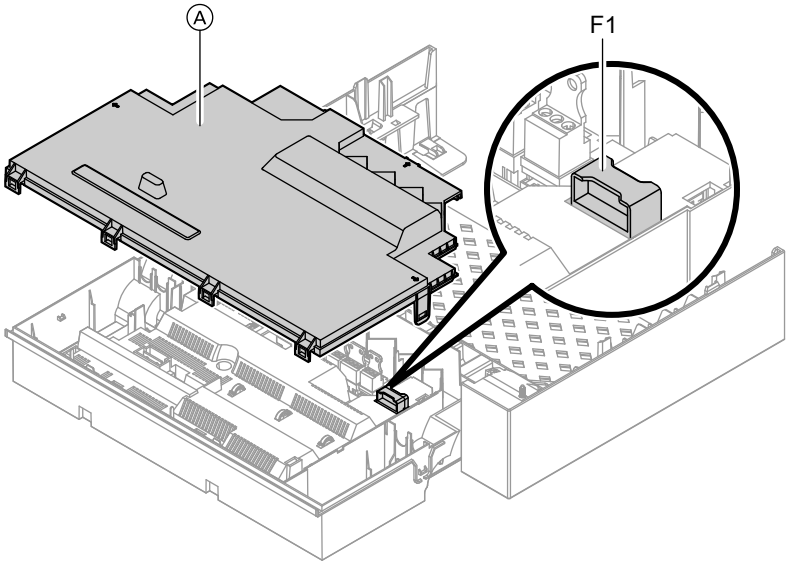
If the burner control unit cannot be reset after a fault shutdown, although the boiler water temperature is below approx. 75 °C, check the following:

Repairs (cont.)



1. Pull the leads from temperature limiter Ⓐ.
2. Check the continuity of the temperature limiter with a multimeter.
3. Remove the faulty temperature limiter.
4. Coat the replacement temperature limiter with heat conducting paste and install it.
5. After commissioning, press reset button **R** on the control unit.

Checking the fuse



1. Switch OFF the power.
2. Release the side closures and pivot the control unit down.

Repairs (cont.)

3. Remove cover Ⓐ.
4. Check fuse F1 (see connection and wiring diagram).

Extension kit for heating circuit with mixer

Checking the setting of rotary selector S1

The rotary selector on the PCB of the extension kit defines the assignment to the relevant heating circuit.

Heating circuit	Rotary selector S1 setting
Heating circuit with mixer M2 (heating circuit 2)	2
Heating circuit with mixer M3 (heating circuit 3)	4

Checking the rotational direction of the mixer motor

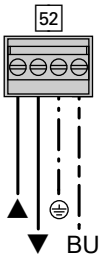
After being switched ON, the boiler implements a self-test. During this, the mixer is opened and closed again.

Note the rotational direction of the mixer motor during its self-test.
Then set the mixer manually to "Open" again.

Note
The flow temperature sensor must now capture a higher temperature. If the temperature drops, either the motor is turning in the wrong direction or the mixer set is incorrectly fitted.

Mixer installation instructions

Changing the rotational direction of the mixer motor (if required)



1. Remove the upper casing cover of the extension kit.

Danger
An electric shock can be life-threatening.
Before opening the boiler, disconnect from the mains voltage, for example at the fuse or the main isolator.

Repairs (cont.)

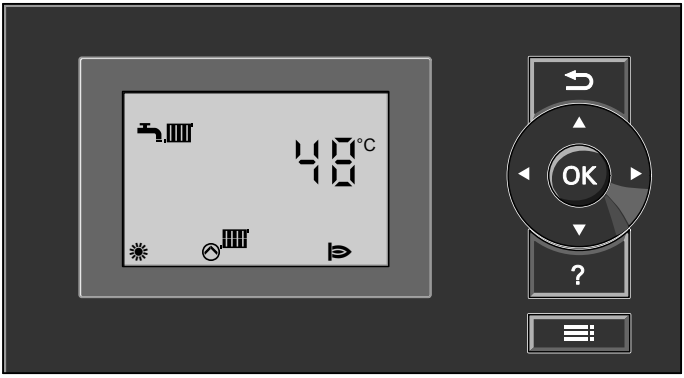
2. At plug [52], swap the cores at terminals "▲" and "▼".

3. Refit the casing cover.

Checking the Vitotronic 200-H (accessories)

The Vitotronic 200-H is connected to the control unit via the LON cable. To test the connection, carry out a subscriber check at the boiler control unit (see page 36).

Constant temperature control unit



Heating mode

The selected set boiler water temperature will be maintained when a demand is being raised by the room thermostat and the heating program is set to DHW and central heating "".
The boiler water temperature will be maintained at the default frost protection temperature when there is no demand.

The electronic temperature limiter inside the burner control unit limits the boiler water temperature.
Flow temperature setting range: 20 to 74 °C.

DHW heating with gas fired combi boilers

If the flow switch detects that hot water is being extracted (> 3 l/min) then the burner, circulation pump and 3-way valve are switched on or changed over. The burner modulates according to the DHW outlet temperature and is limited by the temperature limiter (82 °C) on the boiler side.

DHW heating with a gas fired boiler

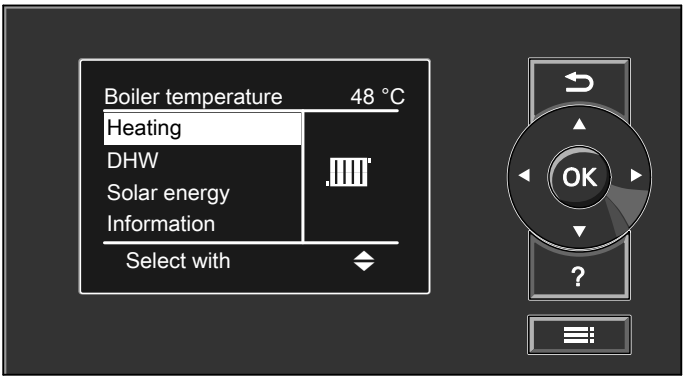
The burner, the circulation pump and the three-way valve are started or changed over if the cylinder temperature lies 2.5 K below the set cylinder temperature.

5692 857 GB

Constant temperature control unit (cont.)

In the delivered condition, the set boiler water temperature is 20 K higher than the set DHW temperature (adjustable via coding address "60"). The burner will be switched OFF and the circulation pump run-on time will begin, if the actual cylinder temperature exceeds the set cylinder temperature by 2.5 K.

Weather-compensated control unit



Heating mode

The control unit determines a set boiler water temperature subject to outside temperature or room temperature (if a room temperature-dependent remote control is connected) and to the slope/level of the heating curve.
The determined set boiler water temperature is transferred to the burner control unit. From the set and actual boiler water temperatures, the burner control unit calculates the modulation level and regulates the burner accordingly.

The electronic temperature limiter inside the burner control unit limits the boiler water temperature.

Weather-compensated control unit (cont.)

DHW heating with gas fired combi boilers

If the flow switch detects that hot water is being extracted (> 3 l/min) then the burner, circulation pump and 3-way valve are switched on or changed over. The burner modulates according to the DHW outlet temperature and is limited by the temperature limiter (82 °C) on the boiler side.

DHW heating with a gas fired boiler

The burner, the circulation pump and the three-way valve are started or changed over if the cylinder temperature lies 2.5 K below the set cylinder temperature.

In the delivered condition, the set boiler water temperature is 20 K higher than the set DHW temperature (adjustable via coding address "60"). The burner will be switched OFF and the circulation pump run-on time will begin, if the actual cylinder temperature exceeds the set cylinder temperature by 2.5 K.

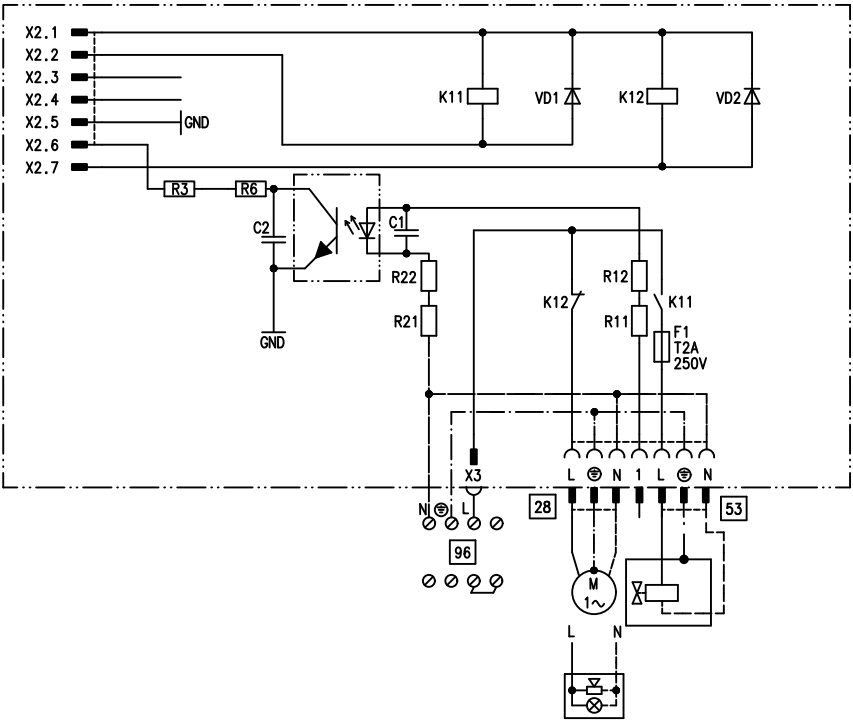
Boosting DHW heating

The booster heating function is activated if a switching period is selected for the fourth time phase.

The set temperature value for the heating boost is adjustable in coding address "58".

Internal extensions (accessories)

Internal extension H1



The internal extension is integrated into the control unit housing. The following alternative functions can be connected to relay output [28]. The function is allocated via coding address "53":

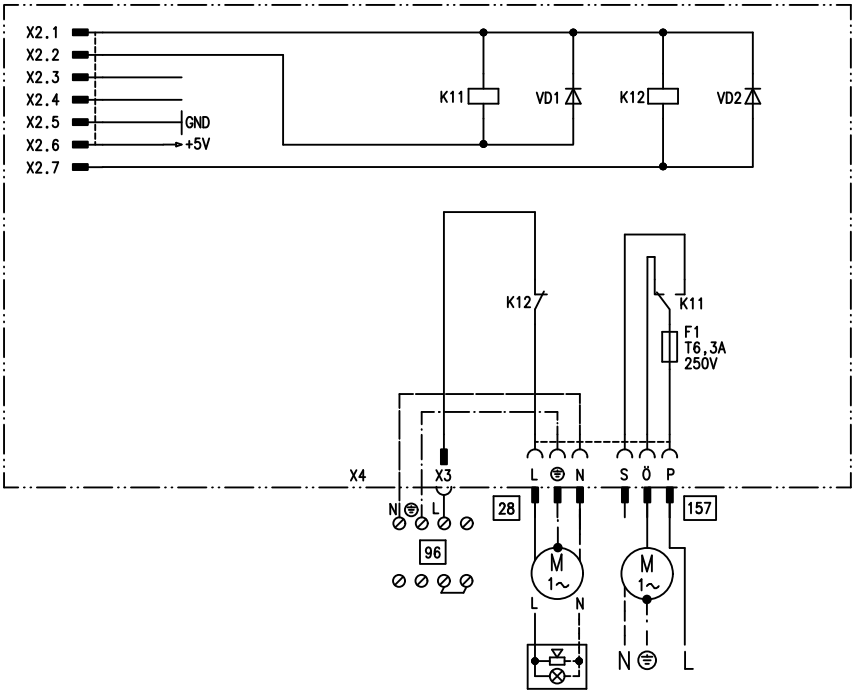
- Central fault message (coding address "53:0")
- DHW circulation pump (coding address "53:1") (only for weather-compensated operation)
- Heating circuit pump for a heating circuit without mixer (coding address "53:2")
- Circulation pump for cylinder heating (coding address "53:3")

An external safety valve can be connected to [53].

5692 857 GB

Internal extensions (accessories) (cont.)

Internal extension H2



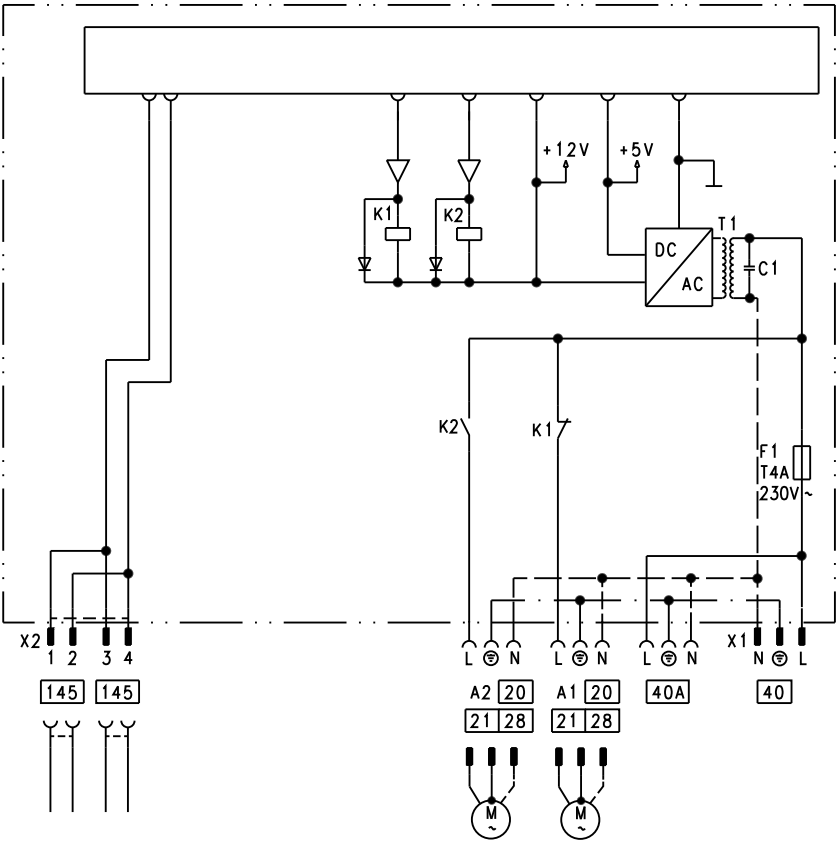
The internal extension is integrated into the control unit housing. The following alternative functions can be connected to relay output 28. The function is allocated via coding address "53":

- Central fault message (coding address "53:0")
- DHW circulation pump (coding address "53:1") (only for weather-compensated operation)
- Heating circuit pump for heating circuit without mixer (coding address "53:2")
- Circulation pump for cylinder heating (coding address "53:3")

An extractor can be switched OFF via connection 157 when the burner starts.

External extensions (accessories)

Extension AM1



A1 Circulation pump
A2 Circulation pump
40 Power supply [terminals]
40A Power supply terminal for additional accessories
145 KM BUS

5692 857 GB

External extensions (accessories) (cont.)

Functions

One of the following circulation pumps can be connected to each of the terminals A1 and A2:

- Heating circuit pump for the heating circuit without mixer
- Circulation pump for cylinder heating
- DHW circulation pump

Allocating functions for outputs A1 and A2

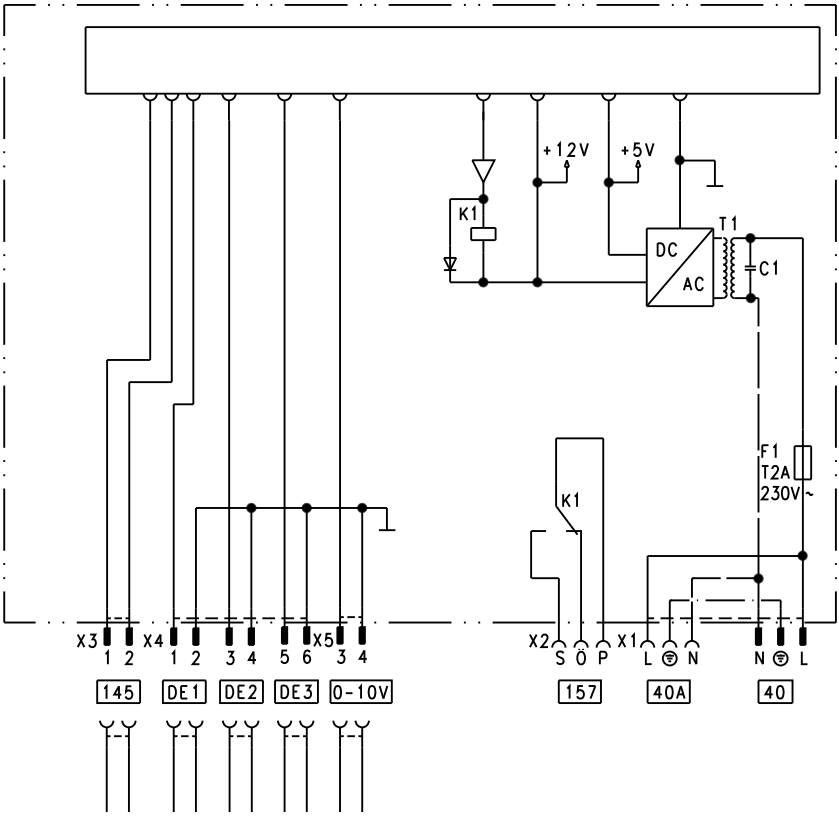
Select the function for these outputs via the codes on the boiler control unit:

- Output A1: Code 33
- Output A2: Code 34

Function	Code	
	Output A1	Output A2
DHW circulation pump [28]	33:0	34:0 (delivered cond.)
Heating circuit pump [20]	33:1 (delivered cond.)	34:1
Circulation pump for cylinder heating [21]	33:2	34:2

External extensions (accessories) (cont.)

Extension EA1



DE1	Digital input 1
DE2	Digital input 2
DE3	Digital input 3
0 - 10 V	0 - 10 V input
40	Power supply [terminals]
40A	Power supply terminal for additional accessories
157	Central fault message/feed pump/DHW circulation pump (zero volt)
145	KM BUS

5692 857 GB

External extensions (accessories) (cont.)

Digital data inputs DE1 to DE3

The following functions can be connected alternatively:
- External heating program changeover for each heating circuit
- External blocking
- External blocking with fault message input
- External demand with minimum boiler water temperature
- Fault message input
- Short operation of the DHW circulation pump

The hooked-up contacts must correspond to protection class II.

Input function assignment

Select the input functions via the codes on the boiler control unit:
- DE1: Code 3A
- DE2: Code 3b
- DE3: Code 3C

Assigning the heating program changeover function to the heating circuits

Assign the heating program changeover function for the respective heating circuit via code d8 at the boiler control unit:
- Changeover via input DE1: Code d8:1
- Changeover via input DE2: Code d8:2
- Changeover via input DE3: Code d8:3

Select the effect of the heating program changeover via code d5:
Set the duration of the changeover via code F2.

Effect on the pumps of external blocking function

The effect on the internal circulation pump is selected with code 3E.
The effect on the relevant heating circuit pump is selected with code d6.
The effect on a circulation pump for cylinder heating is selected with code 5E.

Effect on the pumps of the external demand function

The effect on the internal circulation pump is selected with code 3F.
The effect on the relevant heating circuit pump is selected with code d7.
The effect on a circulation pump for cylinder heating is selected with code 5F.

DHW circulation pump runtime for brief operation

The runtime is set in code 3d.

Analogue input 0 - 10 V

The 0 - 10 V hook-up provides an additional set boiler water temperature:
0 - 1 V taken as "no default set boiler water temperature".
1 V ≙ set value 10 °C
10 V ≙ set value 100 °C

Output 157

The following functions can be connected to output 157:
- Feed pump to substation
  or
- DHW circulation pump
  or
- Fault message facility

External extensions (accessories) (cont.)

Function assignment

Select the function of output 157 via code 36 at the boiler control unit.

Control functions

External heating program changeover

The "External heating program changeover" function is connected via extension EA1. There are 3 inputs available at extension EA1 (DE1 to DE3).

The function is selected via the following codes:

Heating program changeover	Code
Input DE1	3A:1
Input DE2	3b:1
Input DE3	3C:1

Assign the heating program changeover function for the respective heating circuit via code d8 at the boiler control unit:

Heating program changeover	Code
Changeover via input DE1	d8:1
Changeover via input DE2	d8:2
Changeover via input DE3	d8:3

You can select which direction the heating program changeover takes in coding address "d5":

Heating program changeover	Code
Changeover towards "Permanently reduced" or "Permanent standby" mode (subject to the selected set value)	d5:0
Changeover towards "Constant heating mode"	d5:1

The duration of the heating program changeover can be adjusted in coding address "F2":

Control functions (cont.)

Heating program changeover	Code
No heating program changeover	F2:0
Duration of the heating program changeover 1 to 12 hours	F2:1 to F2:12

The heating program changeover stays enabled for as long as the contact remains closed, but at least as long as the duration selected in coding address "F2".

External blocking

The "External blocking" and "External blocking and fault message input" functions are connected via extension EA1. There are 3 inputs available at extension EA1 (DE1 to DE3).

The function is selected via the following codes:

External blocking	Code
Input DE1	3A:3
Input DE2	3b:3
Input DE3	3C:3

External blocking and fault message input	Code
Input DE1	3A:4
Input DE2	3b:4
Input DE3	3C:4

The effect on the internal circulation pump is selected with code 3E.

The effect on the relevant heating circuit pump is selected with code d6.

External demand

The "External demand" function is connected via extension EA1. There are 3 inputs available at extension EA1 (DE1 to DE3).

The function is selected via the following codes:

Control functions (cont.)

External demand	Code
Input DE1	3A:2
Input DE2	3b:2
Input DE3	3C:2

The effect on the internal circulation pump is selected with code 3F.
The effect on the relevant heating circuit pump is selected with code d7.

The minimum set boiler water temperature in case of external demand is selected in coding address "9b".

Venting program

During the venting program, the circulation pump will be alternately switched ON and OFF for 30 s respectively over a period of 20 min.
For a certain period, the diverter valve is alternately set towards heating and DHW heating. The burner is switched OFF during the venting program.

Activate venting program: See "Venting the heating system".

Fill program

In the delivered condition, the diverter valve is set to its central position, enabling the system to be filled completely.
After switching ON the control unit, the diverter valve no longer goes into its central position.
Afterwards, the diverter valve can be moved via the fill function into the central position (see "Filling the heating system"). In this position, the control unit can be switched OFF, and the system can be filled completely.

Filling with the control unit switched ON

If the system is to be filled with the control unit switched ON, the diverter valve is moved in the fill program to its central position and the pump starts.
When the function is enabled, the burner shuts down. The program is automatically disabled after 20 min.

Screed drying function

The screed function enables screeds to be dried. For this, always observe the details specified by the screed manufacturer.

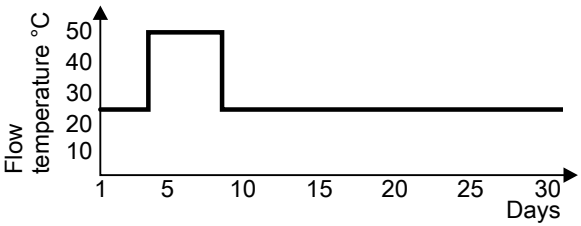
Control functions (cont.)

When the screed drying function is activated, the heating circuit pump of the mixer circuit is switched ON and the flow temperature will be held in accordance with the selected profile. After completion (30 days), the mixer circuit will again be regulated automatically via the set parameters.
Observe EN 1264. The report to be provided by the heating contractor must contain the following heat-up details:

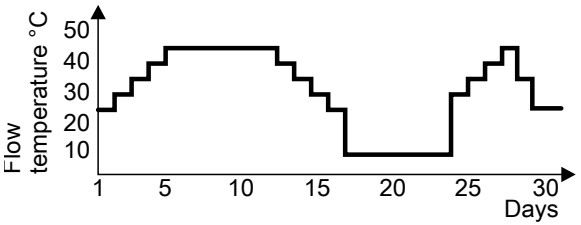
- Heat-up data with respective flow temperatures
- Max. flow temperature achieved
- Operating conditions and outside temperature during handover

The various temperature profiles are adjustable via coding address "F1". The function continues after power failure or after the control unit has been switched OFF. "Heating and DHW" will be started after the screed drying function has been terminated or if code "F1:0" is manually adjusted.

Temperature profile 1: (EN 1264-4) code F1:1

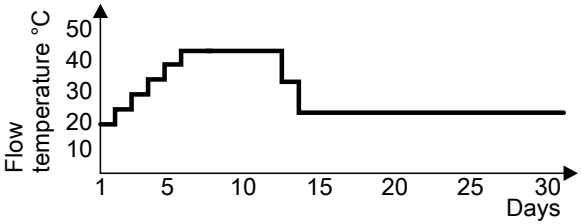


Temperature profile 2: (ZV parquet and flooring technology) code F1:2

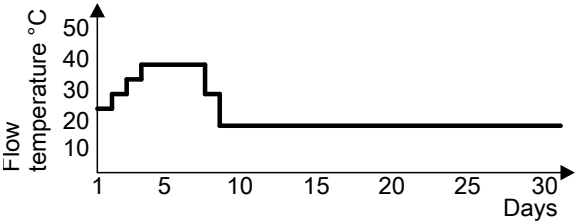


Control functions (cont.)

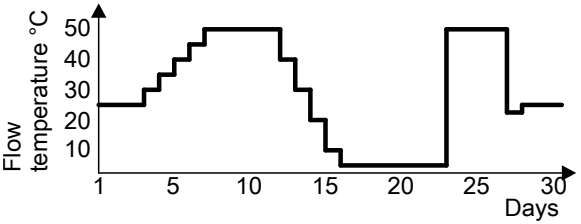
Temperature profile 3: Code F1:3



Temperature profile 4: Code F1:4



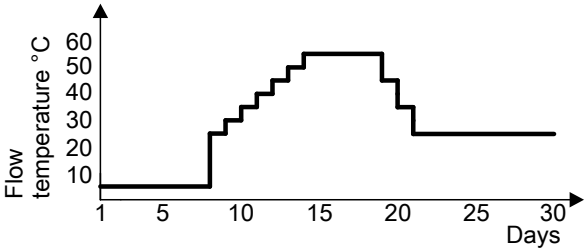
Temperature profile 5: Code F1:5



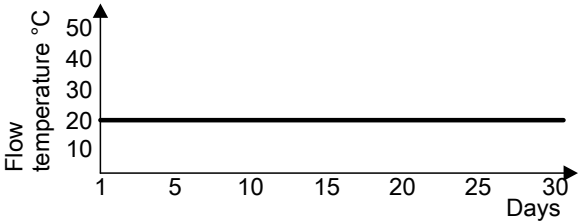
5692 857 GB

Control functions (cont.)

Temperature profile 6: Code F1:6



Temperature profile 7: Code F1:15



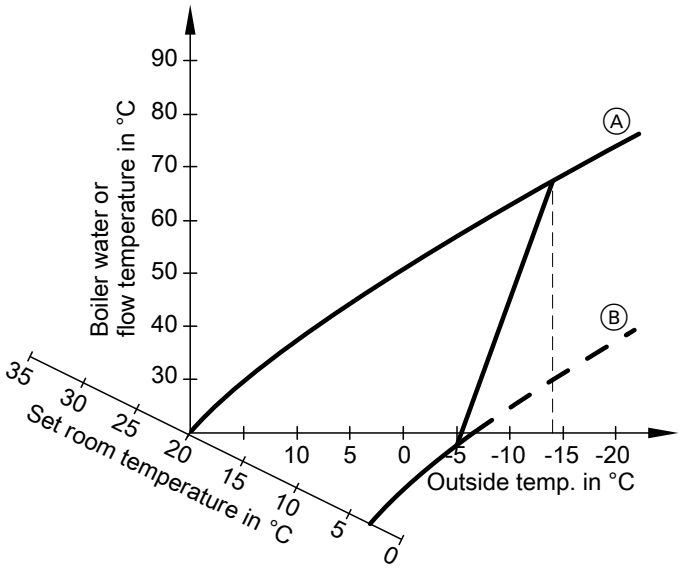
Raising the reduced room temperature

During operation with reduced room temperature, the reduced set room temperature can be automatically raised subject to the outside temperature. The temperature is raised in accordance with the selected heating curve, but no higher than the set standard room temperature.

The outside temperature limits for the start and end of the temperature raising can be adjusted via coding addresses "F8" and "F9".

Control functions (cont.)

Example using the settings in the delivered condition



Ⓐ Heating curve for operation with standard room temperature

Ⓑ Heating curve for operation with reduced room temperature

Reducing the heat-up time

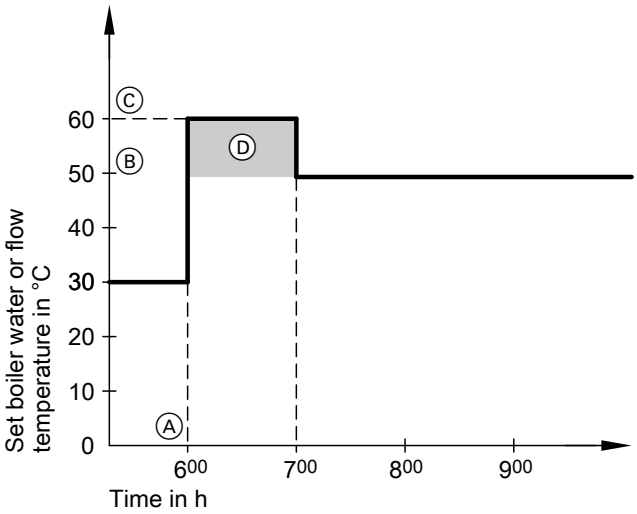
During the transition from operation with reduced room temperature to operation with standard room temperature, the boiler water or flow temperature will be raised in accordance with the selected heating curve. The boiler water or flow temperature can be automatically increased.

The value and duration of the additional increase of the set boiler water or flow temperature can be adjusted in coding addresses "FA" and "Fb".

5692 857 GB

Control functions (cont.)

Example using the settings in the delivered condition



Ⓐ Start of operation with standard room temperature

Ⓑ Set boiler water or flow temperature in accordance with the selected heating curve

Ⓒ Set boiler water or flow temperature in accordance with coding address "FA":
50 °C + 20 % = 60 °C

Ⓓ Duration of operation with raised set boiler water or flow temperature in accordance with coding address "Fb":
60 min

Allocating heating circuits to the remote control

The heating circuit allocation must be configured when commissioning the Vitotrol 200A or Vitotrol 300A.

Heating circuit	Configuration	
	Vitotrol 200A	Vitotrol 300A
The remote control affects the heating circuit without mixer A1	H 1	HK1
The remote control affects the heating circuit with mixer M2	H 2	HK2
The remote control affects the heating circuit with mixer M3	H 3	HK3

Note
One heating circuit can be allocated to the Vitotrol 200A.
Up to three heating circuits can be allocated to the Vitotrol 300A.
If the heating circuit allocation is later cancelled, reset coding address A0 for this heating circuit to 0 (fault message bC, bd, bE).

Electronic combustion controller

The electronic combustion controller utilises the physical correlation between the level of the ionisation current and the air factor λ. For all gas qualities, the maximum ionisation current results with air factor 1.
The ionisation signal is evaluated by the combustion controller, and the air factor is adjusted to between λ=1.24 and 1.44. This range provides for an optimum combustion quality. Thereafter, the electronic gas valve regulates the required gas volume subject to the prevailing gas quality.

To check the combustion quality, the CO_2 content or the O_2 content of the flue gas is measured. The actual values enable the prevailing air factor to be determined. The relationship between the CO_2 or O_2 content and air factor λ is illustrated in the following table.

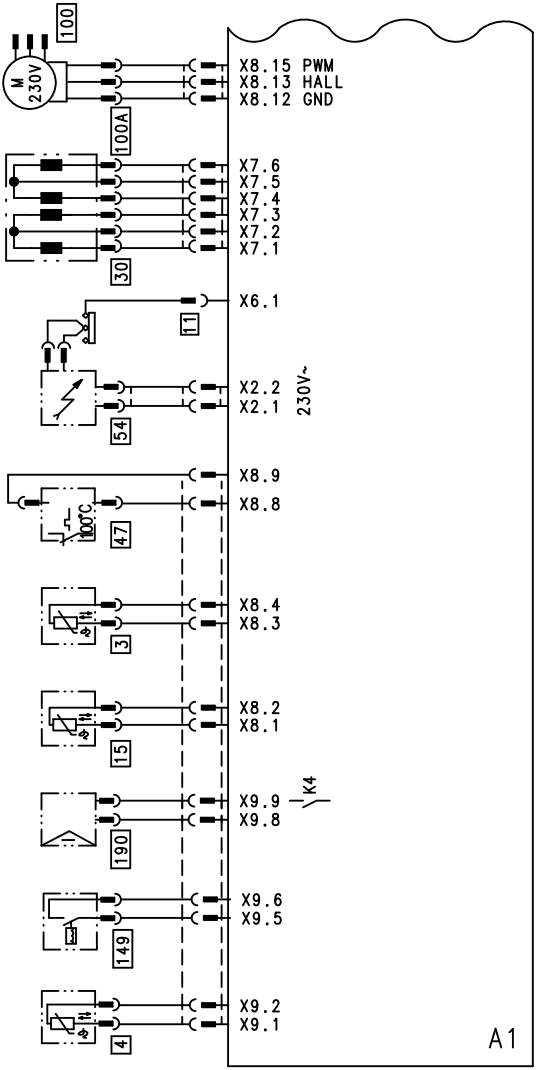
Electronic combustion controller (cont.)

Air factor λ – CO_2/O_2 content

Air factor λ	O_2 content (%)	CO_2 content (%) for natural gas H	CO_2 content (%) for LPG P
1.24	4.4	9.2	10.9
1.27	4.9	9.0	10.6
1.30	5.3	8.7	10.3
1.34	**5.7**	**8.5**	**10.0**
1.37	6.1	8.3	9.8
1.40	6.5	8.1	9.6
1.44	6.9	7.8	9.3

To achieve an optimum combustion control, the system regularly carries out an automatic self-calibration; also after a power failure (shutdown). For this, the combustion is briefly regulated to max. ionisation current (equals air factor λ=1). The automatic calibration is carried out shortly after the burner start and lasts approx. 5 s. During calibration, higher than normal CO emissions may occur briefly.

Connection and wiring diagrams – internal connections



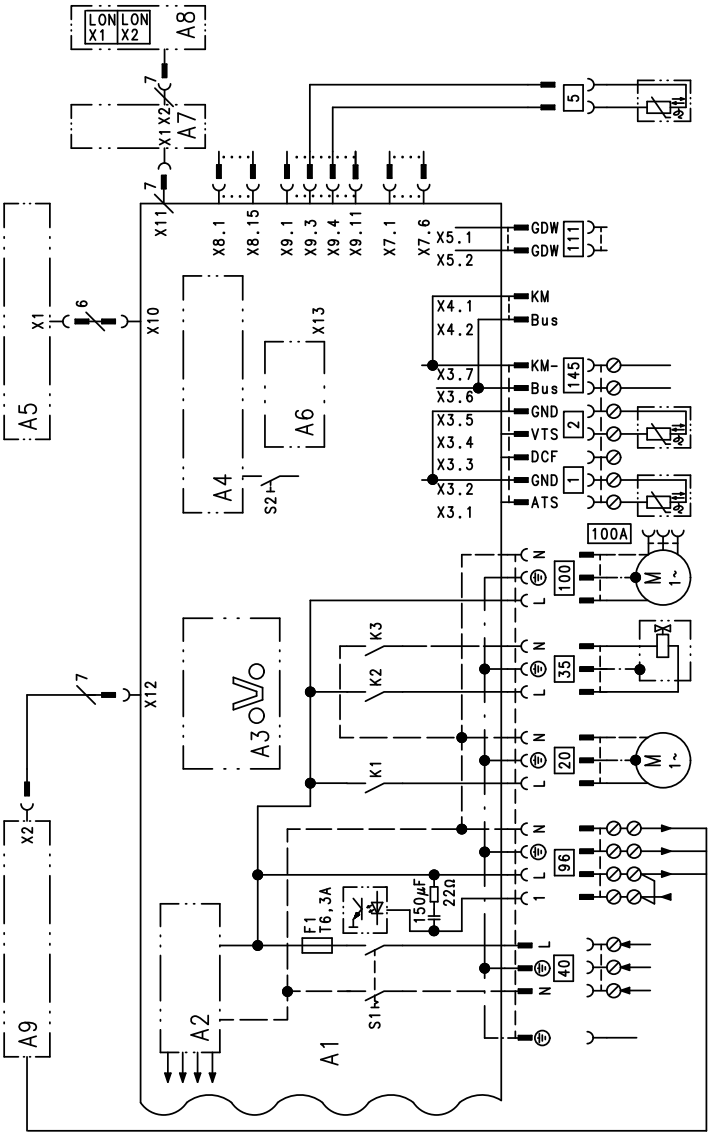
A1 Main PCB
X... Electrical interface
3 Boiler water temperature sensor
4 Outlet temperature sensor (gas condensing combi boiler)
11 Ionisation electrode
15 Flue gas temperature sensor
30 Stepper motor for diverter valve

5692 857 GB

Connection and wiring diagrams – internal… (cont.)

47		Temperature limiter
54		Ignition unit
100		Fan motor
100	A	Fan motor control
149		Flow switch (gas condensing combi boiler)
190		Modulation coil

Connection and wiring diagram – external connections



A1	Main PCB	A4	Burner control unit
A2	Power supply unit	A5	Programming unit
A3	Optolink	A6	Coding card

5692 857 GB

Connection and wiring diagram – external… (cont.)

A7 Connection adaptor
A8 LON communication module (Vitotronic 200)
A9 Internal extension H1 or H2
S1 ON/OFF switch
S2 Reset button
X... Electrical interface
[1] Outside temperature sensor
[2] Flow temperature sensor, low loss header
[5] Cylinder temperature sensor (gas condensing boiler)
or
Comfort sensor (gas condensing combi boiler)
(plug on the cable harness)
[20] Internal circulation pump
[35] Gas solenoid valve
[40] Power supply [terminals]
[96] Power supply accessories and Vitotrol 100
[100] Fan motor
[100] A Fan motor control
[111] Gas pressure limiter
[145] KM BUS

Parts lists

Spare parts information
Quote the part and serial no. (see type plate) and the item number of the required part (as per this parts list). Obtain standard parts from your local supplier.

001 Quick-action air vent valve
002 Heat exchanger connecting pipe
003 Gas supply pipe
004 Heating water return connecting pipe
005 Heating water return connection elbow
006 Pressure gauge
007 Siphon
008 Heat exchanger
009 Thermal insulation block
010 Diaphragm expansion vessel
011 Connection line for the diaphragm expansion vessel
012 Boiler flue connection
013 Boiler flue connection plug
014 Heating water return connection elbow
017 Condensate hose
018 Condensate hose
020 Gasket set, plate heat exchanger[*2]
021 Plate heat exchanger[*2]
022 Pump motor
023 Flow switch[*2]
024 Water volume controller[*2]
025 Linear stepper motor
026 Thermal insulation, plate heat exchanger[*2]
027 Plug-in non-return valve
030 Control unit support
031 Access guard
052 Burner gauze assembly
053 Burner gauze assembly gasket
056 Ionisation electrode gasket
057 Ignition electrode gasket
058 Burner flange gasket
059 Burner fan
060 Gas train
061 Burner door
062 Ignition unit
064 Venturi extension
070 Clip ∅ 8 mm
071 Grommet
072 Gasket A 10x15x1.5 (set)
073 Grommet
074 Air vent valve
075 Grommet
076 O-ring 20.6x2.6 (set)
077 Hose ∅ 10x1.5x750 mm
078 Locking pin ∅ 22 mm
079 Flue gas gasket ∅ 60 mm
080 Gas pipe gasket (set)
081 Plug-in connector gaskets (set)
082 Locking pin
083 Pipe clip ∅ 18 mm
084 Plug-in connector retainers (set)
085 Hose clip
086 Flue gas gasket
088 Gas supply pipe retaining clip
100 Vitodens control unit
101 Back cover
102 Boiler coding card
103 Fuse (10 pce)
104 Fuse holder
105 Programming unit for weather-compensated mode
106 Programming unit for constant temperature operation without time switch
107 LON communication module (accessories)
108 PCB adaptor, LON module (accessories)
109 Internal extension H1
115 Locking bolts, left/right
116 Slider, left/right

[*2] *Only for serial no. 7424 987 ..., 7424 989 ..., and 7424 991 ...*

5692 857 GB

Parts lists (cont.)

117 Programming unit for constant temperature operation with time switch
150 Outside temperature sensor
151 Flue gas temperature sensor
152 Temperature limiter
153 Temperature sensor
154 Comfort sensor*2
200 Front panel with sealing mat
201 Logo
202 Fixing clip

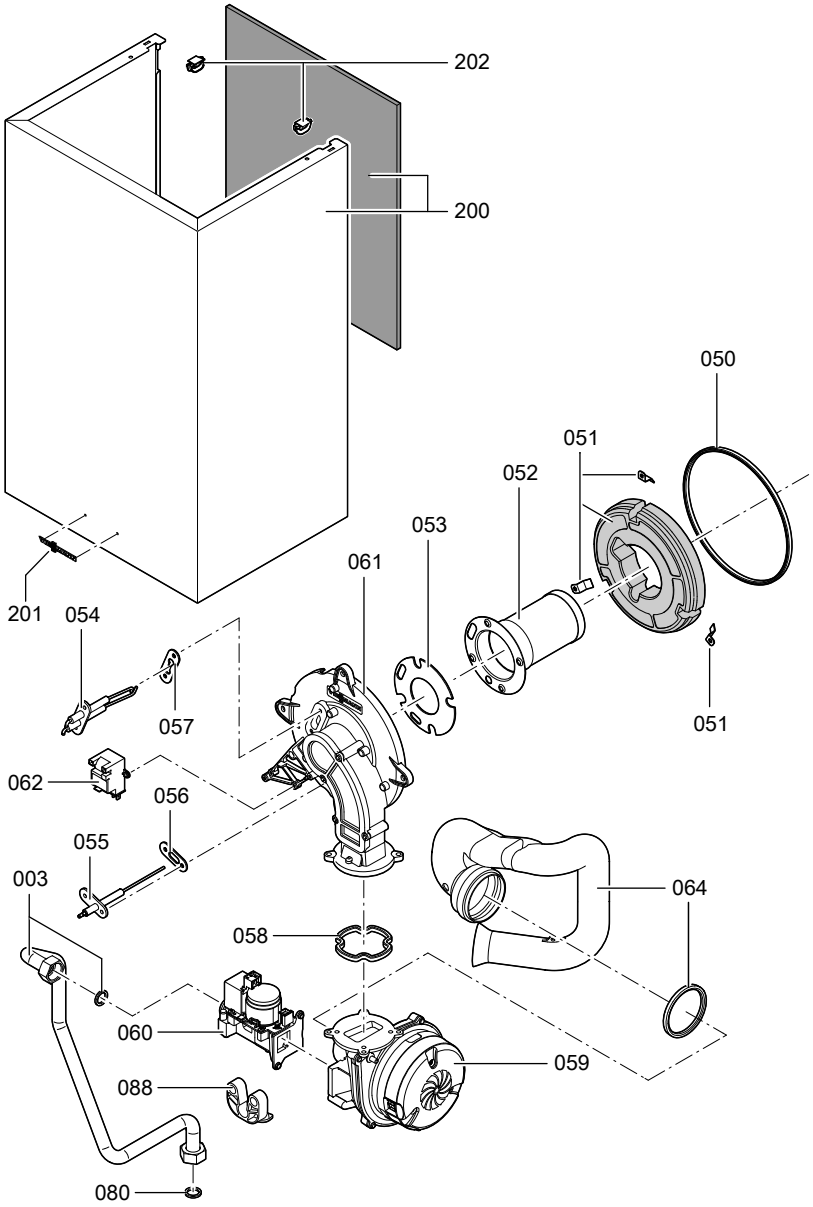
Wearing parts
050 Burner gasket
051 Insulation ring
054 Ignition electrode
055 Ionisation electrode

Parts not shown
063 Gas nozzle
087 Special grease
110 Cable harness X8/X9/ionisation
111 Cable harness 100/35/54/earth
112 Power cable, stepper motor
113 Mating plug
114 Cable fixing
203 Spray paint, Vitowhite
204 Touch-up paint stick, Vitowhite
300 Installation instructions
301 Service instructions
302 Operating instructions for constant temperature mode
303 Operating instructions for weather-compensated mode
304 Operating instructions for constant temperature operation with time switch
Ⓐ Type plate

5692 857 GB

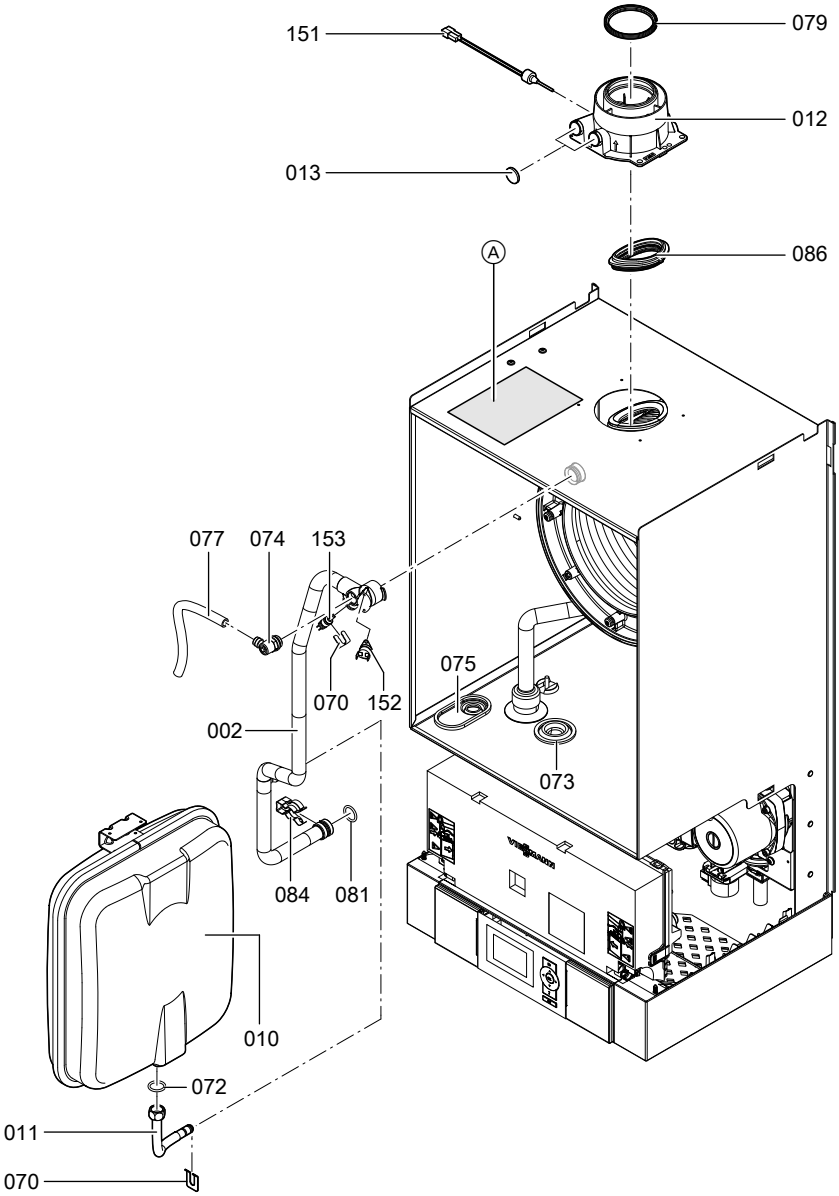
*2 *Only for serial no. 7424 987 ..., 7424 989 ..., and 7424 991 ...*

Parts lists (cont.)



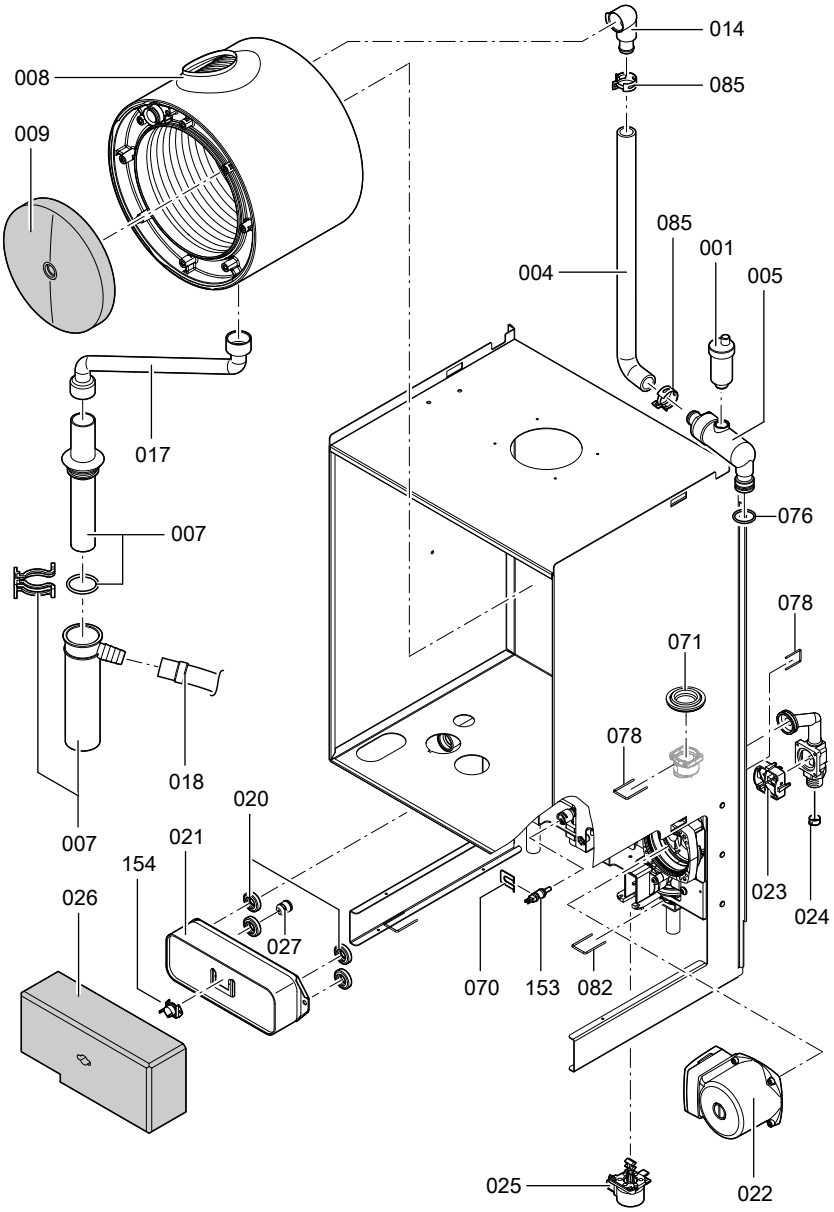
5692 857 GB

Parts lists (cont.)



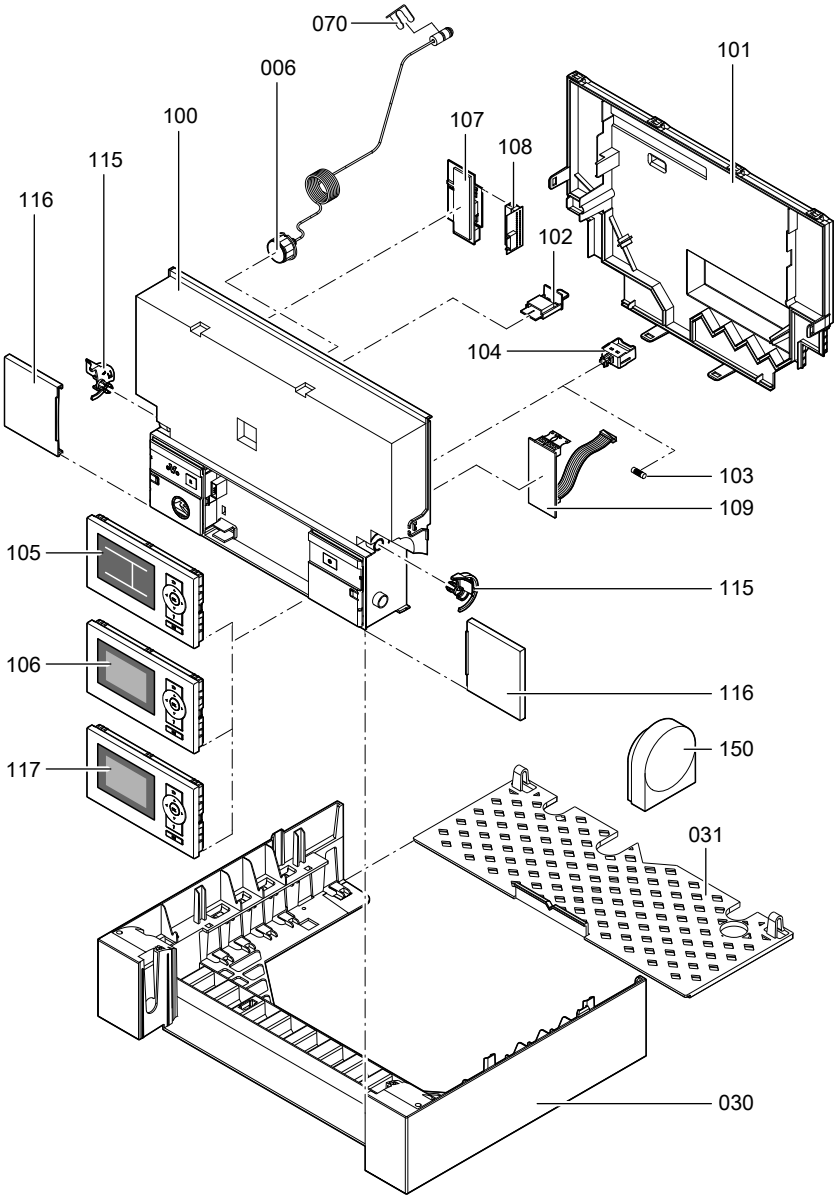
5692 857 GB

Parts lists (cont.)



5692 857 GB

Parts lists (cont.)



5692 857 GB

Commissioning/service reports

Setting and test values Date: By:		Set value	Commissioning	Service
Static pressure	*mbar*	max. 57.5 mbar		
Supply pressure (flow pressure)				
☐ for natural gas H	*mbar*	17.4-25 mbar		
☐ for LPG	*mbar*	25-47 mbar		
Tick gas type				
Carbon dioxide content CO_2				
■ at lower output	*% by vol.*			
■ at upper output	*% by vol.*			
Oxygen content O_2				
■ at lower output	*% by vol.*			
■ at upper output	*% by vol.*			
Carbon monoxide content CO				
■ at lower output	*ppm*			
■ at upper output	*ppm*			

Specification

Rated voltage	230 V	Electronic temperature limiter setting	82 °C
Rated frequency	50 Hz		
Rated current	6 A	Temperature limiter setting	100 °C (fixed)
Protection class	I		
IP rating	IP X 4 D to EN 60529	Line fuse (power supply)	max. 16 A–

Permissible ambient temperature
- during operation 0 to +40 °C
- during storage and transport -20 to +65 °C

Gas condensing boiler

Rated output range					
T_V/T_R 50/30 °C	**kW**	**4.8 - 19**	**6.5 - 26**	**8.8 - 30**	**8.8 - 35**
T_V/T_R 80/60 °C	**kW**	**4.3 - 17.5**	**5.9 - 24.1**	**7.9 - 27.8**	**7.9 - 32.2**
Rated heat input range	kW	4.5 - 17.9	6.2 - 24.7	8.3 - 28.5	8.3 - 33.0
Power consumption in the delivered condition	W	90	105	138	138
Connection values in relation to the max. load with					
natural gas H	m^3/h	1.89	2.61	3.02	3.49
LPG	kg/h	1.40	1.92	2.22	2.56
Product ID		CE-0085BR0432			

Note

The supply values are only for documentation purposes (e.g. in the gas contract application) or to estimate the supplementary volumetric settings. Because of factory settings, the gas pressure must not be altered from these values. Reference: 15 °C, 1013 mbar.

Gas condensing combi boiler

Rated output range				
T_V/T_R 50/30 °C	**kW**	**6.5 - 26**	**8.8 - 30**	**8.8 - 35**
T_V/T_R 80/60 °C	**kW**	**5.9 - 23.7**	**7.9 - 27.8**	**7.9 - 32.2**
Rated output range for DHW heating	**kW**	**5.9 - 29.3**	**7.9 - 30.5**	**7.9 - 35.6**
Rated heat input range	kW	6.2 - 30.5	8.3 - 31.3	8.3 - 36.5
Power consumption in the delivered condition	W	105	138	138
Connection values in relation to the max. load				

Specification (cont.)

Rated output range				
T_V/T_R 50/30 °C	**kW**	**6.5 - 26**	**8.8 - 30**	**8.8 - 35**
T_V/T_R 80/60 °C	**kW**	**5.9 - 23.7**	**7.9 - 27.8**	**7.9 - 32.2**
Rated output range for DHW heating	**kW**	**5.9 - 29.3**	**7.9 - 30.5**	**7.9 - 35.6**
with				
natural gas H	m^3/h	3.23	3.31	3.86
LPG	kg/h	2.38	2.43	2.85
Product ID		CE-0085BR0432		

Note

The supply values are only for documentation purposes (e.g. in the gas contract application) or to estimate the supplementary volumetric settings. Because of factory settings, the gas pressure must not be altered from these values. Reference: 15 °C, 1013 mbar.

5692 857 GB

Declaration of conformity

Declaration of conformity for the Vitodens 200-W

We, Viessmann Werke GmbH&Co KG, D-35107 Allendorf, confirm as sole responsible body that the product **Vitodens 200-W** complies with the following standards:

DIN 4753
EN 483
EN 625
EN 677
EN 806
EN 55 014
EN 60 335-1
EN 60 335-2-102
EN 61 000-3–2
EN 61 000-3-3
EN 62 233

In accordance with the following Directives, this product is designated **CE-0085**:

97/23/EC
92/42/EEC
2004/108/EC
2006/95/EC
2009/142/EC

This product meets the requirements of the Efficiency Directive (92/42/EEC) for **condensing boilers**.

Allendorf, 20 January 2010

Viessmann Werke GmbH&Co KG

pp. Manfred Sommer

5692 857 GB

Manufacturer's certificate according to the 1st BImSchV [Germany]

We, Viessmann Werke GmbH&Co KG, D-35107 Allendorf, confirm that the product **Vitodens 200-W** complies with the NO_x limits specified by the 1st BImSchV paragraph 7 (2) [Germany].

Allendorf, 20 January 2010

Viessmann Werke GmbH&Co KG

pp. Manfred Sommer

Keyword index

A

Acknowledging a fault display.....91
Allocating heating circuits.....132

B

Boiler temperature sensor.....106
Boosting DHW heating.....117
Brief scans.....84
Burner gasket.....19
Burner gauze assembly.....19
Burner installation.....21
Burner removal.....19

C

Calling up fault messages.....91, 92
Calling up the service level.....83
Calling up the service menu.....83
Checking the combustion quality.....25
Code 1
■ Calling up.....39
Code 2
■ Calling up.....53
Codes for commissioning.....27
Combustion chamber cleaning.....21
Combustion controller.....132
Comfort sensor.....108
Commissioning.....8
Commissioning/service report.....144
Condensate drain.....23
Control unit.....115
Cylinder temperature sensor.....106

D

Diaphragm expansion vessel.....8

E

Electronic combustion controller.....132
Expansion vessel.....24
Extension
■ AM1.....120
■ EA1.....122
■ internal H1.....118
■ internal H2.....119
Extension kit for heating circuit with mixer 113
External blocking.....125
External demand.....125

F

Fault codes.....93
Fault history.....91
Fault manager.....36
Fault memory.....91, 92
Faults.....91
Fill function.....126
Filling the system.....8
Fill water.....8
Flow limiter.....24
Flow temperature sensor.....106
Flue gas temperature sensor.....111
Function descriptions.....115
Function testing.....89
Fuse.....112

G

Gas supply pressure.....16
Gas train 16
Gas type.....12
Gas type conversion.....13

H

Heat exchanger, cleaning.....21
Heating curve.....32
Heating curve level.....34
Heating curve slope.....34
Heating program changeover.....124
Heat-up time.....130
Hiding a fault display.....91

I

Ignition.....21
Ignition electrodes.....21
Ionisation electrode.....21

5692 857 GB

Keyword index (cont.)

L
Language selection.....9
LON.....35
■ Fault monitoring.....36
■ Setting subscriber numbers.....35
LON communication module.....35
LON subscriber check.....36

M
Manufacturer's certificate 148

O
Outlet temperature sensor.....108
Output setting.....17
Outside temperature sensor.....105

P
Parts list.....138
Plate heat exchanger.....110

R
Reduced room temperature.....35
Reduced room temperature raising. 129
Reducing the heat-up output.....129
Reducing the heat-up time.....130
Relay test.....89
Remote control.....132
Reports.....144
Resetting codes.....39, 53
Room temperature adjustment.....34
Rotational direction of mixer motor
■ Changing.....113
■ Checking.....113

S
Safety chain 111
Scanning operating conditions.....83
Scanning operating data.....83
Screed drying.....126
Screed drying function.....126
Service scanning.....37
Setting the date.....9, 10
Setting the time.....9, 10
Siphon.....12, 23
Small softening system.....8
Specification 145
Standard room temperature.....34
Static pressure.....16
Supply pressure.....15
System pressure.....8
System schemes.....27, 39

T
Temperature limiter.....111
Tightness test, balanced flue system.18

V
Venting.....10
Venting program.....126
Vitocom 300.....35
Vitotronic 200-H.....35
Vitotronic 200-H.....114

W
Wiring diagram.....134

5692 857 GB

Applicability

Condensing system boiler
Type WB2C
4.8 to 19.0 kW
from serial no.
7424 985 0 00001 ...
6.5 to 26.0 kW
from serial no.
7424 986 0 00001 ...
8.8 to 30.0 kW
from serial no.
7424 990 0 00001 ...
8.8 to 35.0 kW
from serial no.
7424 978 0 00001 ...

Gas condensing combi boiler
Type WB2C
6.5 to 26.0 kW
from serial no.
7124 987 0 00001 ...
8.8 to 30.0 kW
from serial no.
7424 989 0 00001 ...
8.8 to 35.0 kW
from serial no.
7424 991 0 00001 ...

Viessmann Werke GmbH&Co KG
D-35107 Allendorf
Telephone: +49 6452 70-0
Fax: +49 6452 70-2780
www.viessmann.com

Viessmann Limited
Hortonwood 30, Telford
Shropshire, TF1 7YP, GB
Telephone: +44 1952 675000
Fax: +44 1952 675040
E-mail: info-uk@viessmann.com

5692 857 GB Subject to technical modifications.

Printed on environmentally friendly, chlorine-free bleached paper